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UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

April 12, 2005

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APPLICATION NUMBER: 60/649,081

FILING DATE: February 03, 2005

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS



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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (b)(2).

Docket Number		29254		Type a plus sign (+) inside this box ->	+
INVENTOR(s) / APPLICANT(s)					
LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)		
GORDON	Roni		Moshav NetaIm, Doar Na-Emek-Soreq, Israel		
TITLE OF THE INVENTION (280 characters max)					
METHODS AND DEVICES FOR ASSISTING IN CONTROLLING CALORIES INTAKE					
CORRESPONDENCE ADDRESS					
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STATE	VIRGINIA	ZIP CODE	22202	COUNTRY	USA
ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> 69 pages of specification (including Abstract page)			<input checked="" type="checkbox"/> Assignment to: Centriton Ltd.		
<input type="checkbox"/> pages of sequence listing			<input checked="" type="checkbox"/> 5 Claims		
<input checked="" type="checkbox"/> 38 sheets of drawings			<input checked="" type="checkbox"/> Applicant is entitled to Small Entity Status under 37 CFR 1.9 and 37 CFR 1.27		
<input checked="" type="checkbox"/> 107 total pages					
THE FILING FEE HAS BEEN CALCULATED AS SHOWN BELOW:					
FOR:	SMALL ENTITY RATE		OTHER THAN A SMALL ENTITY RATE		FEE
Provisional Application Filing Fee	1	\$ 100			\$ 200
Provisional Application Size Fee (Per 50 Pages Over 100)	1 x \$ 125	\$ 125	1 x \$ 250		\$
	TOTAL	\$ 225	TOTAL		\$
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT					
<input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge \$225 filing fees to Deposit Account No. 50-1407. In the event additional fees are required, please charge these additional fees to Deposit Account No. 50-1407. In the event of overpayment, please credit Deposit Account No. 50-1407. A duplicate copy of this form is enclosed.					

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No ☐ Yes, the name of the US Government agency and the Government contract number are: _____

Respectfully submitted,

SIGNATURE Martin O. Moynihan

1 February 2005

Date

40,338

REGISTRATION NO.
(if appropriate)

TYPED or PRINTED NAME Martin Moynihan

☐ Additional inventors are being named on separately numbered sheets attached hereto.

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

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Methods And Devices For Assisting In Controlling Calories Intake

Inventor: Roni Gordon

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THE NEED

The Obesity Epidemic—Forcing Changes in the Food Industry

Experts agree that the population in developed countries is getting fatter — 64.5% of all adults in the USA are classified as either overweight or obese¹. Obesity is the dominant unmet global health issue, with Western countries topping the list². Not surprisingly, the obesity epidemic is one of the most popular topics in all types of news media. Speaking in San Diego at the largest-ever conference on childhood obesity, Dr. Richard Carmona called ***obesity the fastest growing cause of illness and death in the United States*** and said it deserved more attention than any other epidemic³.

The obesity problem translates into a significant economic burden on the public. Obesity-related medical bills in the U.S. reached \$75 billion in 2003. More than half this sum, about \$39 billion — or about \$175 per taxpayer — was paid by taxpayers through Medicare and Medicaid programs. Taking into account not only obese people but also those who are just a few pounds over an ideal weight, the total annual medical bill reached \$93 billion in 2003. And this sum includes only direct medical costs related to extra weight but not indirect costs such as time off work⁴.

As worries about obesity sharpen, so does the search for somebody to blame. Traditionally, losing weight has been viewed as a matter of personal responsibility. But a growing number of studies suggest that while willpower obviously plays a role, ***environmental factors such as portion size, price, advertising, the availability of food and the number of food choices presented can influence the amount the average person consumes***⁵. Consequently, consumer groups blame fast-food restaurants, food companies and the government for America's obesity problem⁶. For many, especially "public interest" groups, evidence of damage also is evidence of liability⁷.

Government authorities are taking action, as evidenced by a ***flood of legislative solutions that are being proposed***. For example, in 2003 lawmakers of the various states in the U.S. filed more than 140 bills aimed at obesity, nearly double the 72 filed the year before. In the District of Columbia and half a dozen states, lawmakers are debating bills that would require fast food and chain restaurants to post nutrition information such as caloric, fat and sugar content on menus⁸. Consumer groups are proposing a "fat tax" on some junk foods — and even nutritional "warnings" on product packaging. Taxes on high-calorie snacks and soft drinks aren't out of the realm of possibility⁹. ***Regulatory authorities such as the FDA are reconsidering nutrition label regulations, seeking to improve the quality of information given to the public***¹⁰.

JP Morgan analyst Arnaud Langlois called this year's World Health Organization report on obesity "a time bomb for the food industry". Producers, processors and industry associations are very concerned that they will be targeted as a special cause of obesity and that bad publicity will damage sales¹².

An additional concern in the industry is the growing momentum of litigation. At least seven such lawsuits have been filed, said John F. Banzhaf III, a professor of public interest law at George Washington University¹³. Professor Banzhaf, best known for spearheading billion-dollar victories over the tobacco industry and widely credited for the removal of cigarette commercials from television is now channeling similar energy into reforming fast food¹⁴.

Some of the food companies are more vulnerable to threats of lawsuits and government regulations than others. An analyst's report from J. P. Morgan in April 2003 named big companies most likely to suffer (Hershey, Cadbury, Coca-Cola, PepsiCo)¹⁵. Not surprisingly, major foodmakers and food sellers are attempting to take steps to stave off disaster.

Many companies have recently appointed advisory boards of top nutritionists. ***"All big food companies are re-examining their product lines and how they market them,"*** says Marion Nestle, nutrition department chair at New York University. Companies are changing their portfolios, the composition of their products, their packaging and their nutrition labels. For example, Cadbury's portfolio, five years ago, was 80% chocolate; now it is 55% chocolate. McDonald's menus now feature salads and fruit. The composition of foods that are not dietary or health-oriented, and even of junk food, is being revised. PepsiCo, for example, says it has taken all the Trans fats out of its Frito-Lay snacks. The change cost Frito-Lay in the tens of millions of dollars, but this could be a wise investment, judging by recent trends. In the first three quarters of 2003 unit sales volume for Frito-Lay's "better-for-you" products grew about 25%.

Kraft has initiated a global overhaul of the way it creates packages and promotes its foods. Kraft plans to reduce the portion size, fat and calories of many of its foods, a move that other major food companies worldwide are expected to mimic¹⁶. Even McDonald's has begun to provide the public with nutritional value information. Branches in New York, New Jersey and parts of Connecticut now advise customers which items on the menu they can choose in order to reduce their intake of fat, carbohydrates and calories. "We are trying to educate our customers that the foods they love at McDonald's can fit into the diet they're on", said Cristina Vilella, marketing director for the company's New York Metro region¹⁷.

Some food industry supporters believe the lawsuits have spurred the rush of companies announcing new, healthier products, but ***changing food also may be in the best interest of companies, and even may be necessary for their survival.*** In discussions with industry officials and other experts across the food industry, most

observers expect that the building "war on obesity" will have both winners and losers, and that the "nimble, skillful and fortunate" will be able to position themselves to take advantage of new concepts and ideas as they emerge, while the complacent and slow-moving may well be left behind¹⁸.

Driven by consumer demand and fear of regulation and litigation, food makers, retailers and service providers are looking for feasible ways to help consumers eat reasonably.

Trends in Food Shopping—What Are Consumers Looking For?

An old industry truism holds that "the consumer is king". Food retailers today would update that saying to "the consumer is dictator"¹⁹. Analysis of trends in food shopping shows what it is this consumer is looking for:

Wellness: Defined in one expert's opinion, Wellness is money spent to make you feel healthier, even when you're not "sick" by any standard medical terms. The Wellness Industry has shown astounding growth, rising from virtually zero in 1990 to \$200bl in y2000. It is estimated that this \$200bl will become one trillion – or more – by the year 2010²⁰. ***Weight control and healthy eating habits are a central facet of the quest for Wellness.*** More Americans are seeking information on food and nutrition, tuning in to healthful-eating messages and taking action to improve their nutrition and health than at any time in the past decade²¹.

While fat content is less of concern today, people still want to lose fat. In fact, weight-loss has become the No. 1 dietary trend²². Sixty six percent of women and 51% of men state they need to lose weight²³. At any given time, nearly 29% of men and 44% of women are trying to lose weight²⁴. Even among those who are not overweight, increasing numbers attempt to monitor their daily food intake in order to maintain their current weight or to improve their health and well-being. Only 26% of Adults are unconcerned with their weight²⁵. ***Over two thirds of Americans wishing to make a change in their eating patterns constitute a substantial engine for a move.***

Convenience: A glance at the past century's food development milestones suggests that ***the food industry is driven by consumer demands for convenience.*** Convenience, however, is a dynamic term that seems to change with each generation²⁶. These days, people want different things from their food. Individually wrapped and portioned products are hot. From frozen peanut butter and jelly sandwiches to fried chicken, convenience and single size packages are everywhere²⁷. Convenience is also the name of the game in weight management, with most consumers looking for do-it-yourself weight control tools²⁸.

Taste: According to the Food Marketing Institute's annually conducted food trends analysis, "taste" has always been the #1 requisite of consumers²⁹. The trouble is that *consumers want contradictory things. They want to be healthy, but they also want their food to be tasty, cheap and convenient*, all of which point in the opposite direction³⁰.

Attempts by foodmakers to satisfy the public appetite for nutritionally conscious products generated notable flops such as Taco Bell's Border Lite menu, Kellogg's low-fat Pop-Tarts, Kraft's reduced-fat Chips Ahoy and, most infamous, McDonald's McLean burger³¹. A new Harvard Medical School study suggests that children between the ages of 9 and 14 who diet are more likely to gain weight than those who do not — in part because once they have denied themselves certain foods, they can end up overeating or bingeing on those same foods³². The lure of fat and sweets remains deeply embedded in our brains and in our history³³.

It is not surprising that while over \$950 billion are spent each year in the USA on food³⁴, only \$34.7 billion are spent on products defined as "dietary"³⁵. *The figures indicate that "dietary" foods do not give an adequate response to the needs of dieting consumers.*

Health-conscious Americans constitute a huge and growing market. This market is eager for a fair solution that will allow consumers to monitor their food intake easily while eating only conveniently available, reasonably priced, palatable food.

So How Should the Food Industry Help Society Be Leaner?

On the whole, the world's food is getting healthier. Diet, on the other hand, is getting worse. With all the new 'healthier' foods available these days, you would think that Americans would be losing weight, be stronger and healthier. The statistics show that just the opposite is true³⁶.

There is a chaotic abundance of ideas and suggestions about what should be done about weight control, and by whom. Efforts to change food, improve nutritional habits and reduce obesity are complicated by a fundamental problem: ***Scientists still haven't decided on the healthiest approach to dieting.***

Experience shows that trying to make consumers eat only foods that are good for them simply doesn't work. In a recent report on obesity, Merrill Lynch described the food market as "bipolar," divided between our urges to diet and to indulge³⁷.

Moreover, "good" is a dynamic term, affected by a host of individual and social factors. ***Health fads come and go, just as hemlines rise and fall***³⁸. The Natural Marketing Institute (NMI) has released a study focusing on what it calls "wellness

polarization" — a move by consumers "away from more moderate attitudes about health and wellness and toward opposing ends of the spectrum": either all-natural or all-carbs or all-protein or all-whatever³⁹. In 1985 people gave up caffeine; in 1987, salt; in 1994, fat. Now, it's carbohydrates. All those previous fads faded⁴⁰. A report issued by the Hartman Group calls the current low-carb craze a passing fad, although it considers it an indicator of a wider trend regarding the eating habits of Americans in general. Only about 1% of all consumers can be expected to become long-term followers of a low-carb diet, and even this could be an overestimate⁴¹. In response to attempts to classify foods into good and bad, the position of the American Council for Fitness and Nutrition⁴² and the American Dietetic Association⁴³ is that:

All foods, when consumed in moderation, can be part of a healthy diet.

"Diet related health problems are more a matter of unhealthy diets than unhealthy foods", said Dr. Mark McClellan, commissioner of the FDA. "It is the lack of useful information that is prompting consumers to make unhealthy eating choices". The conclusion reached by Roger Deromedi, Kraft co-CEO, is that ***"What people eat is ultimately a matter of personal choice, but we can help make it an educated choice"***⁴⁴. The question is what is the most beneficial information and how can it be used effectively.

On August 11, 2003, Mark B. McClellan, M.D., Ph.D., Commissioner of Food and Drugs, created the FDA's Obesity Working Group (OWG). He charged the OWG to prepare a report that outlines an action plan to cover critical dimensions of the obesity problem from FDA's perspective and authorities. "Our report concludes that there is no substitute for the simple formula that 'calories in must equal calories out' in order to control weight," said FDA Deputy Commissioner Lester M. Crawford, D.V.M., Ph.D. "We're going back to basics, designing a comprehensive effort to attack obesity through an aggressive, science-based, consumer-friendly program with the simple message that 'Calories Count'"⁴⁵.

According to the FDA, there is one basic scientific truth about weight control:

Weight control is primarily a function of caloric balance. You are sure to lose weight if you consume less calories than you burn.

James O. Hill, PhD, director of the Center for Human Nutrition at the University of Colorado Health Sciences Center in Denver, found that people are gaining one to two pounds a year. The reason is that they eat a tiny amount more every day than they should — no more than 100 calories more. The solution is simple — "eat less," says Hill. More specifically, cut 100 calories every day⁴⁶.

But even this small change is difficult to make without the appropriate tools. Previous paradigms aimed at helping people reduce their caloric intake (e.g. introduction of diet foods or low-fat foods) gained many followers but, as the obesity figures show, produced little effect. We believe that only an across-the-board paradigm shift that makes calories the focal nutritional information for all foods in all categories can create a supportive environment for calories counting habits.

Calories, the common denominator of all foods, are the aspect of nutritional content that is best known to the public. Yet a survey conducted by the CENTRITION team shows that *while the vast majority of adults are calorie-conscious, less than 30% know the calorie content of the food they eat and less than 5% know how many calories they need in order to maintain their current weight⁴⁷.*

Despite the abundance of diet books, increasing media attention and growing consumer awareness about nutrition, consumers have trouble using the language of nutritional content. Without knowing the caloric value of our foods or our daily calorie requirements, we can neither reduce our caloric intake nor substitute healthy foods for unhealthy ones within our caloric budget. Without an easy-to-use frame of reference we just can't apply the nutritional content information we're given to guide our nutritional choices. This lacking information holds a key to successful long term changes in our eating habits.

THE PARADOX: Everybody now agrees that most consumers wish to promote their wellness by monitoring their food intake, but lack the basic tools to do so. Only with the appropriate tools will we be able to achieve the necessary balance and moderation in our eating habits.

This is where CENTICAL™ comes into the picture.

CENTICAL™ – WEIGHT CONTROL MADE REALISTIC

The CENTICAL™ system embodies an ingeniously simple paradigm shift in the food world, which gives consumers a realistic tool for controlling their food intake.

The CENTICAL™ Concept

The obvious way to give consumers control over their food intake is to provide them with portions measured directly in relevant units of nutritional content.

Instead of selling food the traditional way, by weight or volume, let's offer food the CENTICAL™ way – packed or measured in units defined by nutritional content.

- ✓ CENTICAL™ provides the infrastructure for a uniform food measurement scheme based on nutritional content.
- ✓ The CENTICAL™ approach creates a paradigm shift by defining a uniform nutritional frame of reference for all food types.
- ✓ This is the simplest way to help consumers grasp the relevant nutritional information, thereby giving them a practical tool for food monitoring.
- ✓ As consumers gain the means to control their nutritional intake, food manufacturers, retailers and service providers free themselves of excessive responsibility.

The CENTICAL™ Method

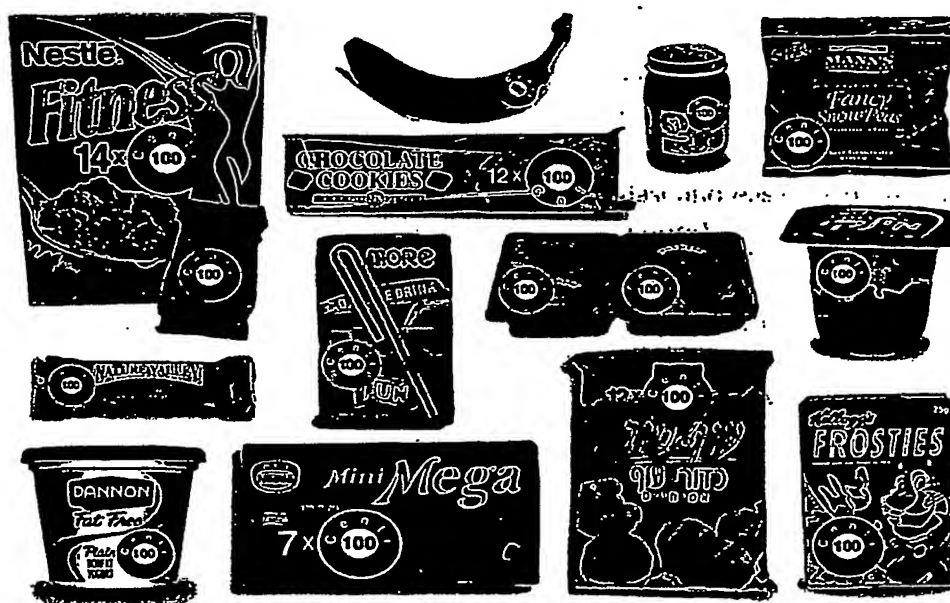
CENTICAL™ is an intuitive yet surprisingly new method that creates a holistic framework for nutritional control. Based on a few simple tools, CENTICAL™ allows consumers to define a nutritional budget and make informed, controlled and flexible choices about the foods they eat within its limits. The modular CENTICAL™ method has four main facets, which can be adopted in whole or in part as an implementation of the basic CENTICAL™ concept:

- [a] A caloric budget is a frame of reference that can augment and improve any weight control method. So ***let's offer foods packed or measured in caloric content units***.

• The CENTICAL™ concept may also be implemented by offering food in other nutritional content units, such as carbohydrate content, protein content etc.

- [b] Adding round numbers is fast and easy, and only fast and easy methods work. So **let's choose caloric content units that are round numbers.**
- [c] In addition to being easy to use in calculations, the base caloric unit must be reasonable as a serving size — neither too small nor too large. Based on analyses of current trends in the food industry, we believe that **the optimal base nutritional unit is 100 calories.** So let's define the basic serving for each type of food as the minimal reasonable portion, rounded to the nearest 100 (or sometimes 50) calorie unit.
- [d] If 100 calories are the optimal base unit, **let's make 100 calories the new nutritional reference unit and define a new base coin in food measurement, the CENTICAL™:**

$$\text{CENTI} = 100 \quad \text{CAL} = \text{CALORIES}$$



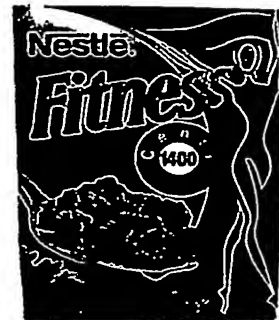
With thousands of food products available to us, we need easy-to-access and easy-to-use tools that will allow us to make informed nutritional choices. The new CENTICAL™ unit is precisely that kind of tool. CENTICAL™ enables defining and implementing a caloric budget and serves as a reference unit that bridges the boundaries between food categories and enables comparisons and educated choices among foods of all kinds.

The CENTICAL™ Calorie Content Marking System

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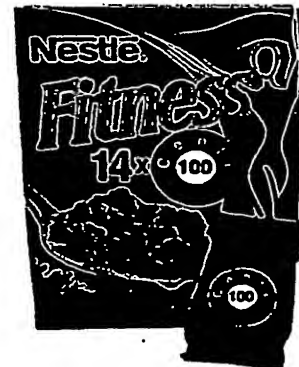
The common denominator of all CENTICAL™ products will be large and clear graphic marking of the caloric content of the food package, presented at the point of eye contact, at the front of the package. Every CENTICAL™ product will be marked with a clear, graphic indication of its caloric content, in the following manner:

- Every food package will state the caloric content of the total amount of food it contains. Whether buying an individual-portion product, a multi-pack or an economy pack, the consumer must know the caloric contents of the entire package.

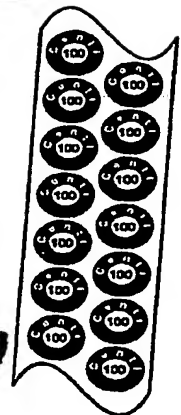
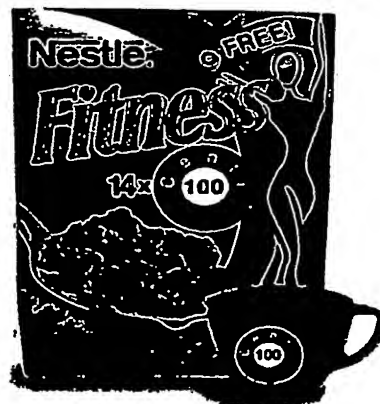


- If the package contains more than one portion, the total caloric content may be stated as a product of the caloric content of an individual portion and the number of portions in the pack. This, however, requires that the package be provided with the means for dividing it into individual CENTICAL-ly-sized portions.

For example, in the case of multi-packs and portioned products, each individual pack will contain a CENTICAL-ly-sized portion. That's why it's reasonable to state the caloric content of entire multi-packs as the product of the caloric content of an individual pack and the number of individual packs in the package. Every individual pack will also be marked with an indication of its caloric content.



The same principle applies to economy packs. If the pack is equipped with an inherent one-step measuring tool for individual CENTICAL-ly-sized portions, it is reasonable to state the total caloric content of the pack as a product of the number of portions. The package will contain a page of removable stickers stating the caloric content of each portion.



Product Range

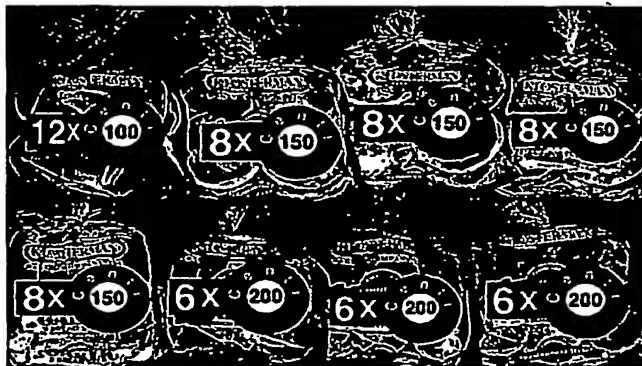
CENTICAL™ products will include all food kinds, allowing consumers to choose their food according to their individual tastes, preferences and dietary guidelines. The range includes:

- **Basic products** e.g. bread, cereal, rice, pasta, fruits, vegetables, meat, poultry, fish, beans, eggs, nuts, milk, yogurt, cheese, fats, oils, sweets.
- **Ready-to-eat products**
- **Fresh, frozen, cooked and canned food**
- **Soft drinks, juices and alcoholic beverages**

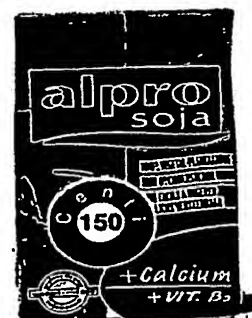
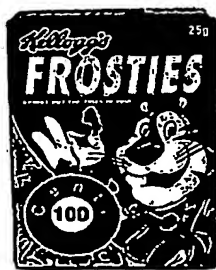
Product Types

CENTICAL™ products come in several major varieties:

✓ **Supermarket Selections:**



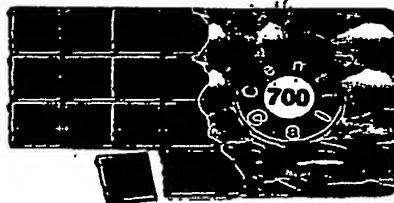
- **Individual portion packages** with a predetermined calorie content, usually a CENTICAL™ multiple;



- **Various types of multi-packs & portioned products**, including pack-in-pack, joined packages, multi-packs or packs with portion dividers comprising several individual portions with a predetermined calorie content, usually a CENTICAL™ multiple;



- **Mid-size packages intended for consumption by one individual over more than one eating session but within the time-frame set for the caloric budget.** For example, a 3-CENTICAL™ milk bottle may be used for the morning's cornflakes and the entire day's coffee, allowing a daily calories count that doesn't require measuring the calories in each individual cup of coffee. Likewise, a 7-CENTICAL™ chocolate tablet can be eaten at will throughout the week as part of a more flexible weekly caloric budget.



- **Other packs** supplied with inherent tools for measuring out food from the package in calorie-based portions. These tools may include markings on the package, markings on the food itself, bottle caps serving as measurement cups, etc.

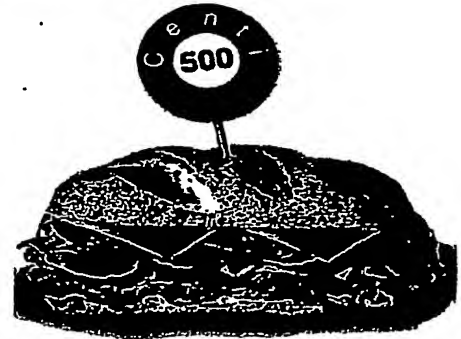


✓ Food Service Selections:

- Restaurant menus
- Deli sandwiches
- Convenience store offerings



SALADS	
Vegetable Salad Assorted vegetables, tossed in a light dressing, and topped with a choice of cheese, nuts, or meat.	\$9.95
Turkey Salad Fresh turkey, lettuce, tomatoes, and onions, topped with a choice of cheese, nuts, or meat.	\$7.95
Chicken Salad Cooked chicken, lettuce, tomatoes, and onions, topped with a choice of cheese, nuts, or meat.	\$7.95
Wish Sandwich Choice of meat, cheese, lettuce, tomatoes, and onions, topped with a choice of cheese, nuts, or meat.	\$7.95



CENTICAL™ Measuring Tools:

- **Markings on the food**, allowing measurement of partial quantities in CENTICAL™ units;
- **Measuring jugs** with markings for measuring out specified liquids or bulk foods (e.g. flour or cereals) in CENTICAL™ units. These measuring jugs may be offered with the food package or separately;
- **Scales** allowing measurement of foods (e.g. flour, pasta, fruit, vegetables, fats) in CENTICAL™ units.



CENTICAL™ Indications

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Each CENTICAL™ product and portion will have a label (preferably a removable sticker) on or in the package, containing the following information*:

- **CENTICAL™ symbol**
- **Primary nutritional information = caloric value**, in calories or CENTICALS™.
- **Secondary information = selected additional nutritional and/or non-nutritional information, displayed graphically.** The choice of additional information displayed will reflect changing trends in the health, wellness and food industries. It may include standard nutrition statements (e.g. "no sugar", "low sodium"), Food Pyramid Group, relative protein/carbohydrate/fat content, and any other nutritional content information in demand (e.g. "low carb", "high protein"), as well as any other non-nutritional information (e.g. product name, weight, price). Sample labels may (but don't have to) look like this:



- Name of product
- CENTICAL™ symbol
- Number of calories in portion
- Red color classifying the product as belonging to the Food Pyramid Meat, Poultry, Fish, Dry Beans, Eggs & Nuts Group
- "Low Carb" indication, aimed at consumers on low carb diets



- Same, but calorie content is stated in CENTICALS™ instead of calories.



- Name of product
- CENTICAL™ symbol
- Number of calories in the container
- Standard "low fat" indication, as defined by the FDA
- Blue color for the Food Pyramid Milk, Yogurt & Cheese Group



- Name of product
- CENTICAL™ symbol
- Number of calories in the serving
- Rings show relative content of carbohydrates (brown), protein (red) & fat (yellow).



- CENTICAL™ symbol
- Number of calories in the serving

* This sticker is an addition, not a replacement to the nutrition labeling required by law.

Documentation Means

CENTICAL™ Diary — Experts agree that keeping a food diary greatly contributes to successful long-term weight loss⁴⁸. CENTICAL™ consumers wishing to document their food intake can simply remove the sticker from the personal CENTICAL™ portion eaten and stick it on the day's page in a CENTICAL™ diary. At the end of the day the diary shows how many calories were consumed and other relevant information such as which foods were eaten and how they were divided among the Food Pyramid Groups.

CENTICAL™ as Reference Unit for Food-Related Information

Food packages display a variety of data relating to the packaged food. Additional information is often displayed in labels located on or near the product's allotted shelf-space. For example, the amount of food in the package is stated, customarily in units of weight or volume. Macro and micronutrient content is stated per weight or volume unit (e.g. per 100g, per fluid ounce), or per serving, where the serving size is defined in weight or volume units (e.g. per a 30g serving of cornflakes with half a cup of skim milk). Price is stated per package, per total package weight, and/or per weight or volume unit.

This type of labeling makes it difficult for consumers who wish to eat within the framework of a nutritional budget to make informed, quick and simple comparisons between food options. For example, servings are not entities that it is reasonable to sum, i.e., it is not reasonable to set a daily "serving" budget (e.g. 20 servings per day). Consequently, for a subject trying to maintain a nutritional budget, comparing the nutritional content of a serving of cornflakes and a serving of yogurt is not a fruitful task. Likewise, it is not reasonable to set a daily food budget in weight units (e.g. 1 kg of food per day), and therefore it is not a fruitful task for a subject to compare the nutritional content of 50g cornflakes and 50g yogurt. Furthermore, since some foods are measured in weight units and others in volume units, summing is not only unfruitful but also often impossible.

In spirit with the general CENTICAL™ concept, we believe that information should be stated relative to the nutritional units that are used to define a nutritional budget, the ideal reference unit for this information being the CENTICAL™, Calorie/CENTICAL-

* Although we believe that the CENTICAL™ is the ideal reference unit for nutritional and other information, alternative applications of the system are possible using other nutritional units as reference units. For example, subjects whose primary nutritional goal is to limit their carbohydrate consumption will want to compare the nutritional benefits of different foods that have the same carbohydrate content. These subjects will benefit from labels that are focused on carbohydrate content, which may state macro and micronutrient content relative to a portion defined in terms of carbohydrate content or relative to a fixed amount of carbohydrates (e.g. 10g), for example.

focused labeling caters to the needs of subjects who maintain a daily caloric budget, which is the most natural type of nutritional budget to use. First, calories are the common denominator of all foods and it is therefore feasible to sum total calorie consumption. Second, whereas it makes no nutritional sense to sum servings or grams eaten per day, it does make sense to sum the calories consumed. Third, it is commonly accepted that limiting caloric intake is a key, if not the key, to weight control. Experts and regulatory authorities are increasingly emphasizing the need for maintaining a caloric budget.

The basic concept underlying the use of calories as reference unit for food-related information is that calories are the cost we pay for consuming foods, and as consumers our goal is to maximize the benefits we obtain for a fixed caloric price.

For a given caloric price we can buy ourselves several different types of benefits — (a) health benefits such as intake of required macro and micronutrients; (b) satiety benefits, *i.e.* how full we feel after consuming this amount of calories, generally related to the weight/calories ratio that characterizes the food; (c) pleasure benefits, *i.e.*, how much pleasure we derive from consuming this amount of calories from this particular product (for example many consumers would derive more pleasure from 100 calories of chocolate than from 100 calories of cabbage); (d) convenience benefits, *i.e.*, how easy is it for us to obtain and prepare this amount of calories from this particular food product (e.g. 100 calories of takeaway sushi are more convenient than 100 calories of salad prepared at home; and (e) price benefits, *i.e.*, how expensive is it for us to obtain this amount of calories from this particular food product, relative to other options with the same caloric content.

Different consumers value the various benefits differently: Some care more about nutrition, some care more about taste. But all weight-conscious consumers will want to maximize the value of the calories they consume on one or more of the scales above. In order to do so consumers must have the relevant cost and benefit information. Taste and convenience benefits are obvious. But for nutrition, satiating effect and price, consumers must receive the appropriate information in a format that will facilitate fruitful comparisons.

Calorie-based units as reference units for nutritional information: A subject who maintains a caloric budget will often want to optimize the nutritional content of the food consumed within the budget. In other words, within a caloric budget, it makes sense to compare the nutritional value of different foods relative to their caloric “cost”. For example, whereas a subject may eat a 500-calorie lunch comprised entirely of chocolate, nutritional considerations will favor eating a 300-calorie chicken breast sandwich and a 200-calorie salad.

Stating nutritional information relative to a caloric reference unit will allow consumers to make an informed, quick and simple comparison based one or more nutritional components between all of the different types of foods, maximizing the nutritional value of the calories they consume. The present document augments Provisional Application No. 60/575,371 filed on June 1, 2004, Provisional Application No. 60/583,601 filed on June 30, 2004, and Provisional Application No. N/A filed on December 27, 2004 (Use of Nutritional Units as Reference Units for Food Labeling). The present document provided further details regarding the use of calories and/or CENTICALs as reference units within the CENTICAL method or independently of the method.

Nutritional information in this respect includes, but is not limited to macro and micronutrient content. According to the present invention, in addition to or instead of stating a food's macro and micronutrient content per 100g or per serving or per container defined in weight or volume units, macro and micronutrient content may be stated per the total number of calories in the package, per pre-measured individual portion where the portion is defined in calorie units, per recommended or pre-measured serving where the serving is defined in calorie units, per 100 calories or per CENTICAL.

The new Dietary Guidelines for Americans, published on January 12, 2005, provide a striking example of why such a calorie-focused labeling system is needed. According to the Guidelines, most Americans should eat fewer calories, be more active, and make wiser food choices within calorie needs. In particular, meeting nutrient recommendations must go hand in hand with keeping calories under control. The guidelines therefore recommend consuming nutrient-dense foods and beverages—those that provide substantial amounts of vitamins and minerals and relatively few calories—maximizing the health benefits of the foods consumed while keeping the total within the energy needs.

However, when it comes to giving specific advice, the Dietary Guidelines fail to implement their own theory! Throughout the report, the nutrient and calorie content tables, meant to guide Americans in making wise food choices, state nutritional information relative to the "standard amounts" defined in weight/volume units. As discussed above, this type of labeling does not provide the means for straightforward comparisons of nutrient densities. Only calorie-focused labeling according to the CENTICAL™ approach would provide the information that the Guidelines themselves deem relevant.

For example, the Dietary Guidelines recommend sweet potato as the No. 1 food choice for potassium: a serving of Sweet Potato (one sweet potato, 146 g) contains 694 mg of potassium, while a serving of beet greens (1/2 cup) contains only 655 mg, and a serving of cooked Spinach (1/2 cup) contains only 419 mg. However,

converting this information to straightforward nutrient-density units (e.g. stating the nutrient content per 100 calories), we see that beet greens and spinach are far better choices than sweet potato as sources for potassium: beet greens contain 3447 mg of potassium per 100 calories, cooked spinach contains 1995 mg of potassium per 100 calories, while sweet potato contains only 530 mg potassium per 100 calories. Clearly this is the relevant information to use when trying to maximize the benefits of the calories consumed. For additional examples from the Dietary Guidelines, see Appendix 1.

Calorie-based units as reference units for non-nutritional information: Other, non-nutritional information in this respect includes, but is not limited to weight, volume, or price. Thus weight, volume or price may be stated per the total number of calories in the package, per pre-measured individual portion where the portion is defined in calorie units, per recommended or pre-measured serving where the serving is defined in calorie units, per 100 calories or per CENTICAL. Stating the weight per caloric unit (e.g., 50g/CENTICAL), for example, provides a measure of "energy-density." To some people, energy density, i.e., how much energy a food contains in relation to its weight, or inversely, how much a food weighs in relation to its caloric content, may be more important than the total amount of energy a food has. Energy density relates to how satiating, or filling, a food is. For example, a large candy bar, which weighs 100 grams, may contain more calories than a meal of sirloin steak served with potatoes and broccoli, having a total weight of 400 grams. Thus, its high energy-density means that the large candy bar has a disproportionately high calorie content relative to its satiating effect. A subject maintaining a caloric budget will want to compare the relative satiating effects of different types of food that have the same caloric costs. For example, when seeking to optimize the satiating effect of a 5-CENTICAL lunch, the subject will prefer a meal of Chicken Breast, Broccoli and Baked Potato with a weight of 100g/CENTICAL (500g/5 CENTICALs) over meal of Hamburger (without the bun) and French Fries with a weight of 35g/CENTICAL (175g/5 CENTICALs), as the energy-density of the second option is 3 times higher than the energy density of the first option.

CENTICAL™ may also be used as reference unit for pricing. Instead of (or in addition to) stating the price per weight or volume unit, price may be stated per 100 calories or CENTICAL™. This information may be used, for example, in price-computing scales.

For detailed examples and discussion of the proposed method of adapting current food labels to the CENTICAL™ concept, using nutritionally-relevant units as reference units for the information, see Appendix 2.

Creating the Infrastructure for a Calorie-Focused System

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A wide-scale shift to calorie-focus in the food universe requires the use of supportive devices and infrastructure. At present, devices used in the manufacturing, processing, measuring or selling of food are weight and/or volume-focused. They accept input in weight or volume units, and/or rely on weight/volume information for calculations, and/or provide output in weight/volume units. These devices will have to be adapted to use caloric units (calories or CENTICALs) as input, output or in the intermediate stages of operation, instead of or in addition to the weight/volume units that are currently used.

Such calorie-based devices will be necessary, for example, in supermarkets, for handling foods that are packed, measured and priced at the retail outlet itself rather than by the manufacturer (e.g. bulk foods, fruit and vegetables, foods sold at counters). These devices include:

Portioning Devices:

Portioning devices are used to obtain a food portion of a particular size. These devices are generally for industrial or semi-industrial use (e.g. for foods that are pre-packaged at the supermarket itself or at a supporting facility). Currently, these devices are weight or volume-controlled — they accept the required portion size in weight/volume units and portion the food accordingly. Some devices also wrap the portion and print a label. Portioning devices may have additional weight-controlled size-reduction options. For example, weight-controlled slicing devices accept as input not only the total portion size but also the desired size of sub-units into which the portion is to be divided, both of them specified in weight units.

In a calorie-focused system, these devices will be adapted to accept as input a portion size defined in calories or CENTICALs — i.e., calorie controlled portioning. Portioning devices exist for different types of food, such as cheese, fruits, vegetables, poultry, fresh and processed meat, French fries, potato chips, bread, ready meals etc. Even for fruit and vegetables, devices are available that accept the desired total weight as input and assemble several units of the fruit or vegetable so that their total weight adds up as required. These devices may sort the fruit or vegetable units by size (by passing them through holes of different sizes, for example), which is then converted to weight according to the conversion table accessed by the device (part of the device's internal software or of the store's ERP). The device then calculates how many units of each size should be included in the package to produce the required total weight. According to the proposed calorie-focused adaptation, such a device would accept as input the desired total caloric content of the package, preferably in multiples of 100 (or 50) calories, will consult the conversion table for the product's

weight-calorie conversions, and will proceed as usual to produce the desired portion. For example, a supermarket may request its fresh meats provider to provide slices of steak in a variety of caloric sizes, e.g. 300, 350, 400, 500 calories, etc.

In certain cases, product-specific weights are used to portion a specific product into predetermined portions. For example, a bakery may use dough weights to divide a large quantity of dough into 150g portions (for buns) and 600g portions (for loaves). In the proposed calorie-focused system, the size of these weights would be adapted to measure out portions defined in caloric units, preferably multiples of 100 or 50 calories. For example, a 2-CENTICAL™ weight weighing 50 grams will be used to portion dough into 2-CENTICAL™ buns.

Price-Computing Scales

Price computing scales accept as input a portion of food and the food's code, and produce as output (on a display or in print) the portion's weight and price. In order to calculate the food's price, the device accesses a look-up-table, in its internal software or in the store's ERP, to find the product's price/unit weight, and multiplies this number by the weight. Some price-computing scales can also accumulate portion prices to produce the total price. Some of these devices are further integrated with other types of devices, such as size reduction machines (slicers, shredders, dicers, etc.), label printers and cash registers.

In a calorie-focused system, these devices will be adapted to produce as output the price of the package and its caloric content, instead or in addition to the package's weight. Here too the adaptation will be implemented by adding weight-calorie conversions to the look-up-table referred to by the device, either internal to the device's software or part of the store's ERP. As in the weight-focused devices, calorie-focused price-computing scales may have the further option of accumulating the caloric content of several packages. These calorie-focused price-computing scales may also be integrated with size reduction machines, label printers and cash registers, providing caloric information together with the price, either on a display or in print.

In particular, in order to allow consumers to buy bulk foods and other pre-packaged foods in CENTICAL-ly sized portions, portioning devices will accept as input desired portion sizes in multiples of 100 or 50 calories. The device will then refer to a look up table in the store's ERP to convert the required portion size from calories to weight and then operate as before to yield the desired portion. For example, a consumer may ask for 10 CENTICALs of Ementhal cheese in 0.5 CENTICAL™ slices. The employee at the counter will input the product code and the desired total size and slice size, in CENTICAL units. The device will access this particular product's data in a look up table in the store's ERP, in order to convert the requested slice size from CENTICAL™ units to weight, and, as usual, from weight to slice thickness. The device

will then adjust the slicer to the calculated slice thickness and slice the appropriate number of slices. If connected to a label printer, the device will output the total caloric content of the portion and the caloric content per slice, and possibly also CENTICAL™ indication stickers as described on page 14.

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For examples of labels that may be produced by calorie-based variants of price-computing scales, see Appendix 3.

CENTICAL™ Advantages

CENTICAL™ turns food monitoring from an impossible chore to a simple undertaking. Counting calories boils down to counting how many CENTICAL™ portions were eaten.

- ✓ CENTICAL™ addresses the needs of a growing pull-market that is demanding a convenient, simple and realistic tool for tracking food consumption.
- ✓ CENTICAL™ is a holistic framework that enables consumers to control their nutritional intake without restricting them to a particular choice of foods.
- ✓ CENTICAL™ makes food shopping convenient. Consumers like to see simple, bold claims on products because it helps them make decisions when shopping in a hurry⁴⁹.
- ✓ Being compatible with all foods, CENTICAL™ is of course compatible with all diets and diet methods.
- ✓ With CENTICAL™, consumers can define a daily calorie budget, which they can use on its own or as a frame of reference to augment their chosen diet method.
- ✓ CENTICAL™ is so simple, even pre-school children can use it. This is an important tool for early education.
- ✓ CENTICAL™ is not difficult to implement, as it does not require major changes either in food products or in food shopping habits.
- ✓ For the consumer, CENTICAL™ represents a modest but effective investment in wellness. For food makers, retailers and service providers, CENTICAL™ represents a means of passing the responsibility for weight control to the consumer and being perceived as pro-consumer.

We believe that before long consumers will be asking for a CENTICAL™ of milk, a three-CENTICAL™ sandwich and a CENTICAL™ of salad.

The CENTICAL™ Method – Frequently Asked Questions

Why calories?

- ✓ ***Because a feasible caloric budget is a tool that can augment any diet.*** Different people vouch for different diet methods. Calorie counting need not replace any of these. Whatever you choose to eat, keeping within a reasonable caloric budget can only do you good. At the very least, attempting to keep within your calorie budget will make you think more about what you eat. If you're willing to invest a little more thought in your food, keeping a constant calorie budget will allow you to experiment with various diet methods and check what really works for you. And finally, if you're a believer in straightforward calorie-based dieting, well obviously, a calorie budget is just what you need.
- ✓ ***Because according to the FDA⁵⁰, the only way to lose weight is either to reduce calorie intake or to increase calorie burning through exercise.*** Some suggest that other methods work too, but nobody doubts that as long as you consume less calories than you burn you are bound to lose weight.
- ✓ ***Because given the right caloric tools we could effect balanced and moderate changes in our diet.*** Instead of going on a drastic "none of this" diet we could eat as little as 100 calories a day less than our daily requirement to produce a moderate and easily maintainable pattern of weight loss. Alternatively, we could substitute the foods we eat by healthier foods while keeping the number of calories we consume constant.
- ✓ ***Because most food shoppers are calorie-conscious anyway:*** Women buy 82% of all groceries⁵¹. Sixty-six percent of American women think they are too fat⁵². Analysis of the Food for Women market shows that women pay great attention to the calorie content of their food⁵³.

Can't we count calories without CENTICAL™?

- ✓ ***We can, but it's awfully difficult.*** Nutrition labels normally specify the calorie content per serving. But more often than not consumers find it difficult to estimate what portion of a package constitutes a serving, or how many so-called servings they actually eat. True, the information is there, but we need to make complex estimations and calculations in order to use it. According to a report by the FDA's Obesity Working Group, many consumers are not willing to spend a lot of time reading labels⁵⁴.

- ✓ The US Federal Trade Commission (FTC) is recommending to the FDA that it should re-examine how food labels define serving sizes because these labels "may significantly understate the amount of particular foods and calories that people typically consume"⁵⁵. The FDA is contemplating a change in policy that would force manufacturers to specify nutrition information for the entire package, not just for serving sizes; **"We want to make sure consumers don't need a calculator to make wise nutritional choices"** said Peter J. Pitts, the FDA's associate commissioner for external relations⁵⁶.
- ✓ **Not only is the information on nutrition labels difficult to use, it's also difficult to see!** Nutrition labels are small and cramped. Many people actually have difficulty reading the calorie content, let alone figuring out what it means.

Why multiples of 100?

- ✓ **Because using round numbers is easy. Multiples of 100 are the easiest way to do calorie math, not the only one.** One common thread in food marketing is simplicity. Marketers have learned from earlier failed attempts that complicated serving calculations contributed to consumer resistance⁵⁷.
- ✓ **Because when we examine on-the-shelf products, 100 calories appears to be the optimal base unit in many types of foods.** Many products are already sold in servings that are $\pm 10\%$ from the nearest CENTICALTM serving.
- ✓ **Because in an industry increasingly centered on snacking and grab-and-go food, 100 calories emerges as the psychologically optimal individual serving size.** Studies conducted by Luna Bar creators showed that women had a 200-calorie threshold when it came to snacking⁵⁸. Kenneth Cooper, MD, MPH, one of the world's foremost experts on health, nutrition and exercise, has developed guidelines for Frito-Lay's new snack products that include a portion cap of 150 calories⁵⁹. On the other hand, products served in portions of up to 50-calorie are identified as dietary and hence less tasty. If 150-200 is the upper threshold for serving sizes and 50 is not attractive, 100 is ideal.

Normal diet methods tell us what to eat. Why doesn't CENTICALTM?

- ✓ **That's the beauty of CENTICALTM — CENTICALTM is not a diet method. It is a broad and flexible framework providing a tool for nutrition control, compatible with all theories and practices of nutrition.** You can eat healthy or unhealthy. You can be a carb fan or a protein fan. You can eat the foods you believe right for your age, gender or health condition. You can consult your doctor, adopt the current fashion in nutrition or ignore the lot. The choice of

what to eat is entirely up to you. But whatever you choose to eat, you will know exactly how many calories you've consumed.

- ✓ **No matter what you choose to eat, CENTICAL™ will provide you with a tool to improve your diet.** With CENTICAL™ you can easily experiment to find your individual caloric budget. You can then stay within this budget and experiment with different foods to see what works best for you.
- ✓ **CENTICAL™ is a platform that will encourage the health and food industries to develop CENTICAL™-based diet methods and tools.** Diets incorporating CENTICAL™ products will obviously be more convenient and easy to follow, hence more effective.

But healthy eating is more than calorie counting!

- ✓ **Obviously, but we've got to start somewhere! That's why in addition to calories, CENTICAL™ labels will indicate other selected, targeted nutritional information, stated in easy-to-grasp units.** For example, labels can be color-coded to help consumers watch their calorie intake while following the guidelines of the USDA Food Pyramid. Other types of information may be selected to address the needs of specific target populations. For example, chains aiming at the elderly population may add statements such as "low sugar" and "low sodium" to the CENTICAL™ labels. Pie charts or other visual means can show the distribution of carbohydrates, proteins and fats where there's public demand for that kind of information.



Blue labels for dairy products

Red labels for meat, poultry, fish, dry beans, eggs & nuts



- ✓ **Grasp all lose all. The purpose of the CENTICAL™ indication is to make it easy to grasp the highest priority nutritional information, not to replace full nutrition labeling.** Full nutrition labels are packed with information that is both hard to read and hard to sort through. With obesity on the rise, locating caloric content quickly and easily is of central importance. That's what CENTICAL™ does. It is a clear, modular and prioritized graphic presentation the few select

nutritional parameters that are the crux of educated consumer choices. The rest of the information appears on the nutrition label.

- ✓ ***Using the CENTICAL™ as a reference unit instead of a “serving” will allow consumers to make more informed choices, maximizing the nutritional value of the calories they consume.***

Is the CENTICAL™ method compatible with popular carb-avoiding diets?

- ✓ ***Certainly. The core concept of the CENTICAL™ system is that food should be sold not in units of weight or volume but in units of nutritional content—calorie content, protein content, carb content, or any other. We believe that the basic nutritional content unit is the calorie, but other nutritional units can be used in addition or even instead. For example, the above-mentioned color-coding system could be used to cater to the needs of consumers on a carb-avoiding diet. These consumers would be advised to concentrate on products with red labels and avoid those with brown labels. A more radical approach to the carb-avoiding issue, also protected by the CENTICAL™ patents, would be to eliminate reference to calories entirely and to sell products in units defined by protein and/or carbohydrate content.***

Finally, isn't the war on obesity a hopeless cause?

- ✓ ***There's no reason to give up. The hopes lie in the overwhelming evidence that, of all age groups, children seem to be the ones who respond best to clear dietary advice⁶⁰. CENTICAL™ is so simple, even pre-school children can use it. Prevention of obesity starting in childhood is critical and can have lifelong, perhaps multigenerational impact⁶¹. Furthermore, studies show that this is a feasible goal. In four randomized studies of obese six-to-twelve-year olds, those offered frequent, simple behavioral advice were substantially less overweight ten years later than those who did not get the advice. Consequently, almost all of the new nutritional activism programs center on children and obesity prevention, rather than on adults and weight loss. CENTICAL™ provides an important tool for early education.***

CENTICAL™ – WHO IS IT GOOD FOR?

Whichever way you look at it, CENTICAL™ seems like the obvious answer to the needs of a well-defined pull market. Consumers are thirsty for easy-to-use tools to control their nutrition. Lawmakers and opinion leaders are fervently searching for the appropriate tools in the fight for weight control. Whether they want to or not, food providers will have to comply. The CENTICAL™ system is where major trends in the health, wellness and food industries converge.

We believe that CENTICAL™-based food products will capture a significant and growing share of the global food market.

How Does CENTICAL™ Work for the Food Maker & Provider?

CENTICAL™ offers a feasible way for Food Industry players to adapt their business in line with the mounting pressure to help consumers eat reasonably.

- ✓ *By giving consumers a practicable tool for controlling their calorie intake, food makers and providers will make a substantial move to free themselves of the blame for obesity.* The CENTICAL™ method is a way to provide the relevant nutritional information in a transparent and user-friendly manner. This is precisely what the industry has been looking for — the means for passing responsibility to the consumer.
- ✓ *CENTICAL™ can help food consumers with ensuing benefits for the food business.* The CENTICAL™ method is compatible with all foods, not only dietary or health-oriented foods. Offering CENTICAL™ versions of their products may help industry players minimize the changes they have to make in their portfolios. By answering the needs of the weight-conscious majority, food producers and retailers can gain an important advantage and increase their market share.
- ✓ *Offering CENTICAL™ to their clients serves the long-term goal of food manufacturers, retailers and service providers, which is to be perceived as pro-consumer and contributing to society's battle against obesity.* In an era of tough competition and increasing consumer awareness, appearing to put the consumer first can help sales.
- ✓ *CENTICAL™ will encourage impulsive shopping even by weight-conscious consumers.* Most weight-conscious consumers limit themselves to a restricted set of foods. CENTICAL™ will enable them to splurge within their caloric budget.

Won't it be difficult for food providers to implement CENTICAL™?

- ✓ **No. In fact, many products are already sold in servings that are $\pm 10\%$ from the nearest CENTICAL™ serving.** A detailed observation of food packages sold in supermarkets shows that CENTICAL™ multiples are a reasonable size of package for most food kinds:
 - Packaging of bread and cereal products, fruit, vegetables and dairy products can be easily adapted to the CENTICAL™ method.
 - Meat products and some types of ready-to-eat food that do not easily lend themselves to single-CENTICAL™-sized portions can be sold in multiple CENTICAL™ units.
- ✓ **Food service providers can list the CENTICAL™ content of the items on their menu.** Delis could offer a choice of 3, 5, or even 10-CENTICAL™ sandwiches. Even hamburger chains could offer a 6 CENTICAL™ lunch comprising a regular hamburger, a small serving of fries, salad with dressing and a diet beverage.

Won't the CENTICAL™ work only as a niche market, for low or reduced calorie foods?

- ✓ **No! The reduced calorie niche is substantial in itself, but CENTICAL™ aims higher. CENTICAL™ targets the majority of consumers, who on the one hand want to watch their weight and on the other do not want to limit themselves to "dietary" foods.** According to the Hartman Group recent findings and contrary to conventional wisdom, "Sarah", the core wellness consumer, has a carton of soy milk next to a bottle of coke in her fridge. Burgers are her treat, and she doesn't see that as inconsistent with a healthy lifestyle. Wellness consumers want healthy food options, but they also want indulgent options, and they refuse to have to choose between the two⁶². Applying the CENTICAL™ method to the entire range of food products will provide these consumers with the psychologically realistic solution they are looking for. Food makers and providers will reap the benefits of offering consumers this service, without having to make radical changes in their portfolio.

For diversified food producers, some foods will win, some lose. Why should they go for it?

- ✓ **Because whether they want it or not, whether they gain or lose, food producers are already being forced to adjust to the health-oriented trend in the food industry.** Once CENTICAL™ enters the market, producers will have no choice but to comply with consumer demand.

- ✓ ***For many foods, CENTICAL™ may in fact equal survival.*** The low-carb craze, for example, has caused its followers to deny carbohydrates altogether, with a significant effect in the market. The health-oriented atmosphere has resulted in changes such as a ban on soft drinks in schools and a decline in French Fries sales. CENTICAL™ may turn out to save many of these foods, which can be sold in portions with reasonable caloric content.

So, will food manufacturers be willing to invest in CENTICAL™?

- ✓ ***Yes! When consumers are looking to buy manufacturers are willing to invest.*** With CENTICAL™, food manufacturers can give their customers what they both need and want. This is an opportunity to meet the demands of the weight-conscious majority, allowing food producers and retailers to gain an important advantage and increase their market share.

How Does CENTICAL™ Work for The Consumer?

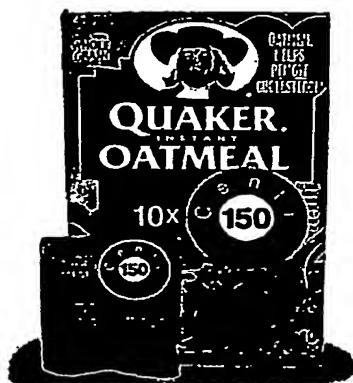
Without limiting consumers to a restricted set of foods or forcing them to radically change their shopping patterns, CENTICAL™ provides a framework for nutrition monitoring that is holistic, flexible and realistic.

- ✓ ***With consumer psychology at its core, CENTICAL™ offers consumers a realistic prospect for long term success.*** CENTICAL™ will make it easy to maintain healthy, moderate eating habits, eating food we actually enjoy with no unnecessary fuss or deprivation.
- ✓ ***CENTICAL™ is a convenient way to diet.*** In addition to the obvious advantage of facilitating calorie counting, CENTICAL™ will make it easy for weight watchers to shop for varied, palatable food suiting their tastes and nutritional needs.
- ✓ ***CENTICAL™ is a convenient way to shop for food.*** The availability of a large variety of products within the system, all easily identifiable on supermarket shelves, will make it easy to shop for food tailored to the nutritional needs and lifestyles of individual family members. With CENTICAL™ even weight watchers can grab and go.
- ✓ ***CENTICAL™ products represent a modest yet effective investment in health and wellness.*** Offering foods that are generally cheaper, but also tastier and more varied than specialized health or dietary foods, the CENTICAL™ method is a reasonable move towards a reasonable lifestyle.

What does a typical day look like for a CENTICAL™ consumer?

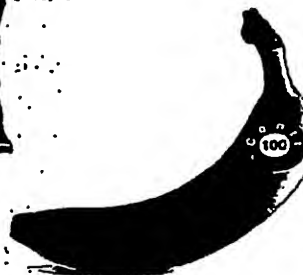
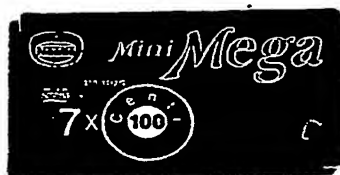
- ✓ *Define an X-CENTICAL™ calorie budget for the day. Eat whatever you want, wherever you want, whenever you want, but make sure your CENTICALS™ add up to X.*

You can set out a CENTICAL™ milk bottle for the entire day's coffee supply and use it throughout the day until it is finished, or use a CENTICAL™ milk measuring cup to prepare your daily milk allowance.



You can eat a mini-bag of cornflakes from a CENTICAL™ multi-pack. You can order one of the 3, 4, 5 or 6-CENTICAL™ sandwich (or cake!) at the deli. You can prepare a CENTICAL-ly-sized individual portion package of pasta with sauce. You can make a CENTICAL-ly-sized chicken salad from chopped chicken breast and frozen vegetables from their CENTICAL™ portioned packages, olive oil

measured out in the CENTICAL™ bottle cap and mayonnaise measured out in a CENTICAL™ measuring spoon. Whether you make it at home, buy it ready-made or dine out, whether you invest in more expensive individual portion products or use economy packs with CENTICAL™ measuring tools, just count your CENTICALS™ and you'll do OK.



Eating the CENTICAL™ way:

Breakfast:

Instant oatmeal made with soy milk

Lunch:

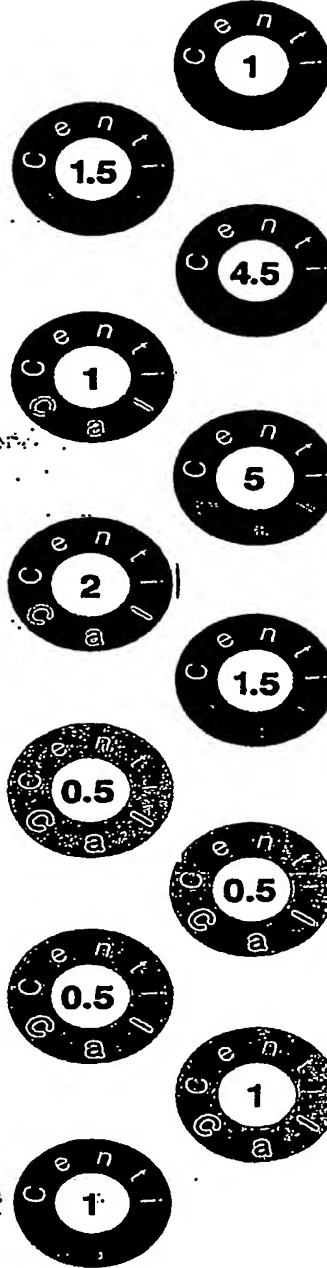
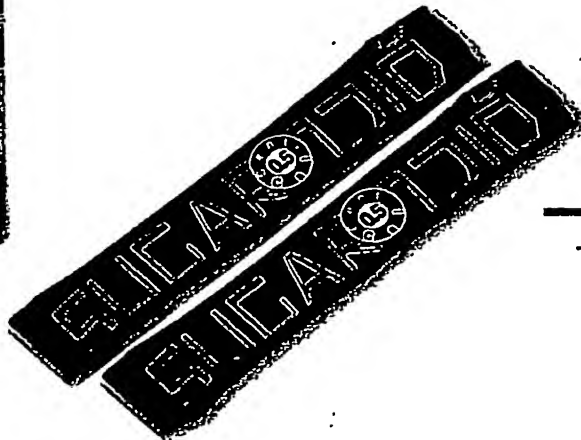
Fish sandwich and orange juice

Dinner:

King size burger and baby watermelon

Coffee and snacks:

Milk and sugar for the day's coffee (3 cups),
energy bar and fun-size ice cream



Total: 20 CENTICALS

Won't the CENTICAL™ system require major changes in consumers' shopping habits?

- ✓ **No! Changes in family structure and lifestyle, combined with the search for convenience, are driving more and more consumers to buy food in personal portions.** CENTICAL™ fits into this trend, enlarging the selection of food products offered in personal portions, with the added benefit of contributing to weight control and overall wellness.

Families can continue to enjoy economy size packages, which will be provided with easy to use tools for measuring CENTICAL™ portions.



Will consumers be willing to pay for CENTICAL™ products?

- ✓ **Absolutely. The CENTICAL™ method can be applied to a broad range of products at no significant cost to the end consumer.** Certainly most CENTICAL™ products will be no more expensive than specialized "dietary" or "healthy" foods. Depending on their priorities, consumers will be able to choose between different CENTICAL™ measuring tools, at different price premiums. For example, buying individual 150-calorie milk bottles may be more expensive but also more convenient than measuring out milk from a larger scaled bottle.

- ✓ ***Consumers are willing to pay to be healthier.*** The CENTICAL™ method fits well into the rapidly growing Wellness industry and offers a significant enhancement to the wellness-oriented lifestyle.
- ✓ ***Our survey results show that consumers are willing to spend more on their food while dieting, to compensate themselves for the deprivation.*** CENTICAL™ will offer them the opportunity not only to eat modestly but also to splurge, without necessarily breaking their diet.
- ✓ ***Consumers are willing to pay for extra convenience.*** CENTICAL™ equals convenience for all those millions who want or need to monitor their food intake.

But diet is a psychological issue, and CENTICAL™ doesn't deal with psychological aspects.

- ✓ ***On the contrary. CENTICAL™ is ABOUT psychology.*** The method is effective because it is flexible. It takes into account our bipolar attitude to food, our need for simplicity, convenience, flexibility and taste. It provides us with a framework to change our eating habits in moderation, increasing our chances for long term success.

So Can CENTICAL™ Help Society Become Leaner?

The CENTICAL™ method is a win-for-all solution to the weight control problem. Assimilating CENTICAL™ into the food culture can indeed help society be leaner.

- ✓ ***The simple, standardized and effective CENTICAL™ method can be instrumental in controlling society's obesity problem.*** CENTICAL™ was designed with the needs of the majority of the population in mind, even those of us with less than admirable perseverance and self control. If CENTICAL™ can work for the average person, CENTICAL™ can work for society.
- ✓ ***Since CENTICAL™ can augment any diet method, there's no reason to delay action until the weight control debate is settled.*** Regardless of the ever-changing health fads and expert opinions, endorsing the CENTICAL™ method is a reasonable move for legislators, regulatory authorities and consumer groups.
- ✓ ***CENTICAL™ serves everybody's interests – it can work for consumers with ensuing benefits for Food Industry players.*** Since food makers, retailers and service providers will benefit from offering it as a service to their customers, CENTICAL™ can have a significant effect on the food culture even without legislative enforcement.
- ✓ ***CENTICAL™ will be easy to teach and easy to assimilate – even preschool children can count their CENTICAL™ labels!*** With childhood obesity on the rise and increasing awareness of the importance of early education to good nutrition, a weight-control method that even children can understand is of obvious significance.

All roads lead to CENTICAL™. We just happened to be the first to notice.

SUMMARY

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The CENTICAL™ system is a paradigm shift that provides a holistic solution to the well-recognized needs of a huge and rapidly growing market. CENTICAL™ offers the food manufacturer or retailer a singular opportunity to increase both market share and profit margins.

APPENDIX 1: CALORIC REFERENCE UNITS IN LIGHT OF THE NEW DIETARY GUIDELINES FOR AMERICANS

Dietary Guidelines for Americans has been published jointly every 5 years since 1980 by the Department of Health and Human Services (HHS) and the Department of Agriculture (USDA). The Guidelines provide authoritative advice for people two years and older about how good dietary habits can promote health and reduce risk for major chronic diseases. They serve as the basis for Federal food and nutrition education programs. Dietary Guidelines for Americans 2005 was released January 12, 2005, by HHS Secretary Tommy G. Thompson and USDA Secretary Ann M. Veneman⁶³. According to the FDA, this version of the Dietary Guidelines for Americans is a publication oriented toward policymakers, nutrition educators, nutritionists, and healthcare providers rather than to the general public, as with previous versions of the *Dietary Guidelines*, and contains more technical information.

Taken together, the Dietary Guidelines encourages most American to ***"eat fewer calories, be more active, and make wiser food choices"***. The third chapter of the Guidelines, entitled "Weight Management" makes two key recommendations, both of them calorie-focused⁶⁴:

- ◆ "To maintain body weight in a healthy range, balance calories from foods and beverages with calories expended."
- ◆ "To prevent gradual weight gain over time, make small decreases in food and beverage calories and increase physical activity."

The second chapter of the Guidelines, entitled "Adequate Nutrients within Calorie Needs", states that "Many Americans consume more calories than they need without meeting recommended intakes for a number of nutrients. This circumstance means that ***most people need to choose meals and snacks that are high in nutrients but low to moderate in energy content***; that is, meeting nutrient recommendations must go hand in hand with keeping calories under control.⁶⁵" Attempting to provide guidance on this complicated issue, the Guidelines states that "...when making changes to improve nutrient intake, one needs to make substitutions to avoid excessive calorie intake." One of the key recommendations made by the Guidelines is: "Consume a variety of nutrient-dense foods and beverages within and among the basic food groups"⁶⁶. The Guidelines defines nutrient-dense foods as "...those that provide substantial amounts of vitamins and minerals (micronutrients) and relatively few calories. Foods that are low in nutrient density are foods that supply calories but relatively small amounts of micronutrients, sometimes none at all. The greater the consumption of foods or beverages that are low in nutrient density, the more difficult it is to consume enough nutrients without gaining weight..."⁶⁷

Essentially, the Guidelines recommends that when choosing between several different foods as a source for a particular nutrient, people should compare the foods on two parameters: calories per serving and nutrient content per serving, where serving sizes are provided, as usual, in arbitrary weight/volume units. The problem is that foods that are low in calories don't always provide enough nutrients and foods that are high in nutrients are sometimes too high in calories — there is no clear cut way to rank the value of different foods as sources for nutrients. Therefore people must constantly try to balance these two often conflicting requirements.

Not surprisingly, Appendix B of the Guidelines, entitled "Food Sources of Selected Nutrients", simply ranks foods by nutrient content per standard amount of food. As for caloric content, the tables are described as "also showing calories in the standard amount". In other words, the Guidelines does not provide the means for following its own recommendations. Use of caloric units (preferably 100 calories) as reference unit for nutritional information allows straightforward comparisons of the nutrient densities of different foods, enabling dieters to maximize the nutritional benefit obtained from a fixed amount of calories.

The examples below show how the tables in Appendix B of the Guidelines may be reorganized in a calorie-focused manner. The tables re-rank the value of different foods as sources of particular nutrients by descending nutrient-density order. Two calorie-focused variants are shown for each original table of the Guidelines. One variant ranks foods by nutrient content per 100 calories. These tables show the new ranking, the nutrient content per 100 calories, the original ranking of the foods according to the Guidelines, the Guidelines definition for "standard amount" of the food, and the caloric content of a "standard amount" and the nutrient content. The second type of variant suggests "round caloric servings" for each food, obtained by rounding the caloric content of the "standard amount" to the nearest multiple of 25 calories.

Table A-1.1 Food sources of Potassium ranked by milligrams of Potassium per 100 calories

Rank	Guidelines Rank	Food	Standard Amount	Potassium/ standard amount	Calories/ standard amount	Potassium/ 100 calories
1	3	Beet greens, cooked	1/2 cup	655	19	3447
2	21	Spinach, cooked	1/2 cup	419	21	1995
3	22	Tomato juice	3/4 cup	417	31	1345
4	2	Tomato paste	1/4 cup	664	54	1230
5	7	Tomato puree	1/2 cup	549	48	1144
6	16	Winter squash, cooked	1/2 cup	448	40	1120
7	12	Blackstrap molasses	1 Tbsp	498	47	1060
8	23	Tomato sauce	1/2 cup	405	39	1038
9	30	Cantaloupe	1/4 medium	368	47	783
10	11	Carrot juice	3/4 cup	517	71	728
11	32	Honeydew melon	1/8 medium	365	58	629
12	1	Sweetpotato, baked	1 potato, (146 g)	694	131	530
13	19	Cod, Pacific, cooked	3 oz	439	89	493
14	26	Apricots, dried, uncooked	1/4 cup	378	78	485
15	15	Lima beans, cooked	1/2 cup	484	104	465
16	25	Milk, non-fat	1 cup	382	83	460
17	6	Yogurt, plain, non-fat	8-oz container	579	127	456
18	18	Rockfish, Pacific, cooked	3 oz	442	103	429
19	8	Clams, canned	3 oz	534	126	424
20	4	Potato, baked, flesh	1 potato (156 g)	610	145	421
21	34	Orange juice	3/4 cup	355	85	418
22	24	Peaches, dried, uncooked	1/4 cup	398	96	415
23	13	Halibut, cooked	3 oz	490	119	412
24	15	Tuna, yellowfin, cooked	3 oz	484	118	410
25	20	Bananas	1 medium	422	105	402
26	33	Plantains, cooked	1/2 cup slices	358	90	398
27	10	Prune juice	3/4 cup	530	136	390
28	5	White beans, canned	1/2 cup	595	153	389
29	14	Soybeans, green, cooked	1/2 cup	485	127	382
30	29	Buttermilk, cultured, low-fat	1 cup	370	98	378
31	9	Yogurt, plain, non-fat	8-oz container	531	143	371
32	31	1%-2% milk	1 cup	366	111	330
33	33	Kidney beans, cooked	1/2 cup	358	112	320
34	32	Lentiles, cooked	1/2 cup	365	115	317
35	34	Split peas, cooked	1/2 cup	355	116	306
36	24	Prunes, stewed	1/2 cup	398	133	299
37	17	Soybeans, mature, cooked	1/2 cup	443	149	297
38	27	Rainbow trout, farmed, cooked	3 oz	375	144	260
39	35	Yogurt, plain, whole-milk	8-oz container	352	138	255
40	28	Pork loin, center rib (roasts), lean	3 oz	371	190	195
41	25	Pork chop, center loin, cooked	3 oz	382	197	194

According to the Guidelines, sweetpotato ranks first as source of potassium. But whereas 100 calories of sweetpotato contain 530 mg potassium, 100 calories of cooked beet greens contain 3447 mg and 100 calories of cooked spinach contain 1995 mg! The amount of potassium obtained from one serving of sweetpotato (694 mg potassium) for a "cost" of 131 calories can be obtained from 0.53 cup of cooked beet greens for a "cost" of only 20 calories and from 0.83 cup of cooked spinach for a "cost" of only 35 calories.

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Rank	Guidelines Rank	Food	Standard Amount	Potassium/standard amount	Calories/standard amount	Round Caloric Serving	% Change	Potassium/round caloric serving
1	3	Beet greens, cooked	1/2 cup	655	19	25	32%	862
2	1	Sweetpotato, baked	1 potato, (146 g)	694	131	150	15%	795
3	6	Yogurt, plain, non-fat	8-oz container	579	127	150	18%	684
4	8	Clams, canned	3 oz	534	126	150	19%	636
5	4	Potato, baked, flesh	1 potato (156 g)	610	145	150	3%	631
6	2	Tomato paste	1/4 cup	664	54	50	-7%	615
7	10	Prune juice	3/4 cup	530	136	150	10%	585
8	5	White beans, canned	1/2 cup	595	153	150	-2%	583
9	14	Soybeans, green, cooked	1/2 cup	485	127	150	18%	573
10	7	Tomato puree	1/2 cup	549	48	50	4%	572
11	16	Winter squash, cooked	1/2 cup	448	40	50	25%	560
12	9	Yogurt, plain, non-fat	8-oz container	531	143	150	5%	557
13	12	Blackstrap molasses	1 Tbsp	498	47	50	6%	530
14	23	Tomato sauce	1/2 cup	405	39	50	28%	519
15	21	Spinach, cooked	1/2 cup	419	21	25	19%	499
16	19	Cod, Pacific, cooked	3 oz	439	89	100	12%	493
17	26	Apricots, dried, uncooked	1/4 cup	378	78	100	28%	485
18	15	Lima beans, cooked	1/2 cup	484	104	100	-4%	465
19	25	Milk, non-fat	1 cup	382	83	100	20%	460
20	24	Prunes, stewed	1/2 cup	398	133	150	13%	449
21	17	Soybeans, mature, cooked	1/2 cup	443	149	150	1%	446
22	18	Rockfish, Pacific, cooked	3 oz	442	103	100	-3%	429
23	34	Orange juice	3/4 cup	355	85	100	18%	418
24	24	Peaches, dried, uncooked	1/4 cup	398	96	100	4%	415
25	13	Halibut, cooked	3 oz	490	119	100	-16%	412
26	15	Tuna, yellowfin, cooked	3 oz	484	118	100	-15%	410
27	20	Bananas	1 medium	422	105	100	-5%	402
28	33	Plantains, cooked	1/2 cup slices	358	90	100	11%	398
29	30	Cantaloupe	1/4 medium	368	47	50	6%	391
30	27	Rainbow trout, farmed, cooked	3 oz	375	144	150	4%	391
31	28	Pork loin, center rib (roasts), lean, roasted	3 oz	371	190	200	5%	391
32	25	Pork chop, center loin, cooked	3 oz	382	197	200	2%	388
33	35	Yogurt, plain, whole-milk	8-oz container	352	138	150	9%	383
34	29	Buttermilk, cultured, low-fat	1 cup	370	98	100	2%	378
35	11	Carrot juice	3/4 cup	517	71	50	-30%	364
36	22	Tomato juice	3/4 cup	417	31	25	-19%	336
37	31	1%-2% milk	1 cup	366	111	100	-10%	330
38	33	Kidney beans, cooked	1/2 cup	358	112	100	-11%	320
39	32	Lentiles, cooked	1/2 cup	365	115	100	-13%	317
40	32	Honeydew melon	1/8 medium	365	58	50	-14%	315
41	34	Split peas, cooked	1/2 cup	355	116	100	-14%	306
				Average Change:		4%		

Table A-1.3 Food Sources of Vitamin E ranked by milligrams of Vitamin E per 100 calories

Rank	Guidelines Rank	Food	Standard Amount	Vitamin E/ standard amount	Calories/ standard amount	Vitamin E/ 100 calories
1	9	Turnip greens, frozen, cooked	1/2 cup	2.9	24	12.1
2	18	Dandelion greens, cooked	1/2 cup	1.8	18	10.0
3	17	Spinach, cooked	1/2 cup	1.9	21	9.0
4	1	Fortified ready-to-eat cereals	1 1/2 oz	7	98	7.1
5	12	Tomato sauce	1/2 cup	2.5	39	6.4
6	12	Tomato Puree	1/2 cup	2.5	48	5.2
6	10	Tomato paste	1/4 cup	2.8	54	5.2
7	4	Sunflower oil, high linoleic	1 Tbsp	5.6	120	4.7
8	2	Sunflower seeds, dry roasted	1 oz	7.4	165	4.5
8	3	Almonds	1 oz	7.3	164	4.5
9	14	Wheat germ, toasted, plain	2 Tbsp	2.3	54	4.3
10	5	Cottonseed oil	1 Tbsp	4.8	120	4.0
11	6	Sunflower oil, high oleic	1 Tbsp	4.6	120	3.8
12	16	Carrot juice, canned	3/4 cup	2.1	71	3.0
13	7	Hazelnuts (filberts)	1 oz	4.3	178	2.4
14	13	Canola oil	1 Tbsp	2.4	124	1.9
14	20	Blue crab, cooked/canned	3 oz	1.6	84	1.9
15	8	Mixed nuts, dry roasted	1 oz	3.1	168	1.8
16	16	Peanut oil	1 Tbsp	2.1	119	1.8
17	17	Olive oil	1 Tbsp	1.9	119	1.6
17	17	Corn oil	1 Tbsp	1.9	120	1.6
18	11	Pine nuts	1 oz	2.6	191	1.4
19	15	Peanuts	1 oz	2.2	166	1.3
19	16	Avocado, raw	1/2 Avocado	2.1	161	1.3
19	12	Peanut butter	2 Tbsp	2.5	192	1.3
20	19	Sardine, Atlantic, in oil, drained	3 oz	1.7	177	1.0
21	20	Brazil nuts	1 oz	1.6	186	0.9
22	21	Herring, Atlantic, pickled	3 oz	1.5	222	0.7

* Values for cereals are 1.6-12.8 AT (mg) and calories range between 90 to 107. The number used in the table is the average.

Table A-1.4 Food sources of Vitamin E ranked by milligrams of Vitamin E per round caloric serving

[illegible]

Table A-1.5 Food sources of Iron ranked by milligrams of Iron per 100 calories

Rank	Guidelines Rank	Food	Standard Amount	Iron/standard amount	Calories/standard amount	Iron/100 calories
	2	Fortified ready-to-eat cereals (various)	1 oz	n/a	n/a	n/a
	4	Organ meats (liver, giblets), various, cooked	3 oz	n/a	n/a	n/a
	5	Fortified instant cooked cereals (various)	1 packet	n/a	n/a	n/a
1	1	Clams, canned, drained	3 oz	23.8	126	18.9
2	11	Spinach, cooked from fresh	1/2 cup	3.2	21	15.2
3	3	Oysters, eastern, wild, cooked, moist heat	3 oz	10.2	116	8.8
4	9	Blackstrap molasses	1 Tbsp	3.5	47	7.4
5	18	Tomato puree	1/2 cup	2.2	48	4.6
6	20	Tomato paste	1/4 cup	2	54	3.7
7	6	Soybeans, mature, cooked	1/2 cup	4.4	149	3.0
8	10	Lentils, cooked	1/2 cup	3.3	115	2.9
9	7	Pumpkin and squash seed kernels, roasted	1 oz	4.2	148	2.8
10	8	White beans, canned	1/2 cup	3.9	153	2.5
11	14	Kidney beans	1/2 cup	2.6	112	2.3
11	17	Shrimp, canned	3 oz	2.3	102	2.3
12	18	Cowpeas, cooked	1/2 cup	2.2	100	2.2
13	18	Lima beans, cooked	1/2 cup	2.2	108	2.0
14	16	Chickpeas, cooked	1/2 cup	2.4	134	1.8
14	19	Refried beans	1/2 cup	2.1	118	1.8
15	18	Soybeans, green, cooked	1/2 cup	2.2	127	1.7
15	17	Prune juice, 3/4 cup	3/4 cup	2.3	136	1.7
15	19	Navy beans	1/2 cup	2.1	127	1.7
16	13	Beef, bottom round, lean, 0% fat, all grades, cooked	3 oz	2.8	182	1.5
17	12	Beef, chuck, blade roast, lean, cooked	3 oz	3.1	215	1.4
17	15	Sardines, canned in oil, drained	3 oz	2.5	177	1.4
18	17	Duck, meat only, roasted	3 oz	2.3	171	1.3
18	20	Beef, top sirloin, lean, 0% fat, all grades, cooked	3 oz	2	156	1.3
19	16	Beef, rib, lean, 1/4% fat, all grades	3 oz	2.4	195	1.2
20	18	Ground beef, 15% fat, cooked	3 oz	2.2	212	1.0
20	17	Lamb, shoulder, arm, lean, 1/4% fat, choice, cooked	3 oz	2.3	237	1.0

Table A-1.6 Food sources of Iron ranked by milligrams of Iron per round caloric serving

[illegible]

Table A-1.7 Food sources of Calcium ranked by milligrams of Calcium per 100 calories

Rank	Guidelines Rank	Food	Standard Amount	Calcium/standard amount	Calories/standard amount	Calcium/100 calories
n/a	1	Fortified ready-to-eat cereals (various)	1 oz	236-1043	88-106	n/a
n/a	12	Oatmeal, plain and flavored, instant, fortified	1 packet	99-110	97-157	n/a
1	19	Pak-choi, Chinese cabbage, cooked from fresh	1/2 cup	79	10	790.0
2	6	Collards, cooked from frozen	1/2 cup	178	31	574.2
3	10	Turnip greens, cooked from frozen	1/2 cup	124	24	516.7
4	8	Spinach, cooked from frozen	1/2 cup	146	30	486.7
5	15	Kale, cooked from frozen	1/2 cup	90	20	450.0
6	21	Dandelion greens, cooked from fresh	1/2 cup	74	17	435.3
7	18	Beet greens, cooked from fresh	1/2 cup	82	19	431.6
8	2	Soy beverages, calcium fortified	1 cup	368	98	375.5
9	7	Molasses, blackstrap	1 Tbsp	172	47	366.0
10	16	Okra, cooked from frozen	1/2 cup	88	26	338.5
11	4	Tofu, firm, prepared with nigari	1/2 cup	253	88	287.5
12	3	Sardines, Atlantic, in oil, drained	3 oz	325	177	183.6
13	5	Pink Salmon, canned, with bone	3 oz	181	118	153.4
14	13	Cowpeas, cooked	1/2 cup	106	80	132.5
15	11	Ocean perch, Atlantic, cooked	3 oz	116	103	112.6
16	17	Blue crab, canned	3 oz	86	84	102.4
17	9	Soybeans, green, cooked	1/2 cup	130	127	102.4
18	14	White beans, canned	1/2 cup	96	153	62.7
19	20	Clams, canned	3 oz	78	126	61.9
20	16	Soybeans, mature, cooked	1/2 cup	88	149	59.1
21	22	Rainbow trout, farmed, cooked	3 oz	73	144	50.7

Table A-1.8 Food sources of Calcium ranked by milligrams of Calcium per round caloric serving

Rank	Guidelines Rank	Food	Standard Amount	Calcium/standard amount	Calories/standard amount	Round Caloric Serving	% Change	Calcium/round caloric serving
	1	Fortified ready-to-eat cereals (various)	1 oz	236-1043	88-106	n/a	n/a	n/a
	12	Oatmeal, plain and flavored, instant, fortified	1 packet prepared	99-110	97-157	n/a	n/a	n/a
1	2	Soy beverages, calcium fortified	1 cup	368	98	100	2%	376
2	3	Sardines, Atlantic, in oil, drained	3 oz	325	177	200	13%	367
3	4	Tofu, firm, prepared with nigari	1/2 cup	253	88	100	14%	288
4	7	Molasses, blackstrap	1 Tbsp	172	47	50	6%	183
5	9	Soybeans, green, cooked	1/2 cup	130	127	150	18%	154
6	5	Pink Salmon, canned, with bone	3 oz	181	118	100	-15%	153
7	6	Collards, cooked from frozen	1/2 cup	178	31	25	-19%	144
8	13	Cowpeas, cooked	1/2 cup	106	80	100	25%	133
9	10	Turnip greens, cooked from frozen	1/2 cup	124	24	25	4%	129
10	8	Spinach, cooked from frozen	1/2 cup	146	30	25	-17%	122
11	11	Ocean perch, Atlantic, cooked	3 oz	116	103	100	-3%	113
11	15	Kale, cooked from frozen	1/2 cup	90	20	25	25%	113
12	21	Dandelion greens, cooked from fresh	1/2 cup	74	17	25	47%	109
13	18	Beet greens, cooked from fresh	1/2 cup	82	19	25	32%	108
14	17	Blue crab, canned	3 oz	86	84	100	19%	102
15	14	White beans, canned	1/2 cup	96	153	150	-2%	94
16	20	Clams, canned	3 oz	78	126	150	19%	93
17	16	Soybeans, mature, cooked	1/2 cup	88	149	150	1%	89
18	16	Okra, cooked from frozen	1/2 cup	88	26	25	-4%	85
19	19	Pak-choi, Chinese cabbage, cooked from fresh	1/2 cup	79	10	10	0%	79
20	22	Rainbow trout, farmed, cooked	3 oz	73	144	150	4%	76
					Average Change:		13%	

Table A-1.9 Food sources of dairy Calcium ranked by milligrams of Calcium per 100 calories

Rank	Guidelines Rank	Food	Standard Amount	Calcium/ standard amount	Calories/ standard amount	Calcium/ 100 calories
1	11	Fat-free (skim) milk	1 cup	306	83	369
2	1	Plain yogurt, non-fat	13 g protein/ 8 oz	452	127	356
3	3	Plain yogurt, low fat	12 g protein/ 8 oz	415	143	290
3	16	Buttermilk, low-fat	1 cup	284	98	290
4	13	1% low-fat milk	1 cup	290	102	284
5	1	Romano cheese	1.5 oz	452	165	274
6	9	Mozzarella cheese, part-skim	1.5 oz	311	129	241
7	15	2% reduced fat milk	1 cup	285	122	234
8	2	Pasteurized process Swiss cheese	2 oz	438	190	231
9	8	Provolone cheese	1.5 oz	321	150	214
10	5	Swiss cheese	1.5 oz	336	162	207
11	19	Yogurt, plain, whole milk	8 g protein/ 8 oz	275	138	199
12	6	Ricotta cheese, part skim	1/2 cup	335	170	197
13	12	Muenster cheese	1.5 oz	305	156	196
14	18	Whole milk	1 cup	276	146	189
15	23	Feta cheese	1.5 oz	210	113	186
16	14	Low-fat chocolate milk	1 cup	288	158	182
17	10	Cheddar cheese	1.5 oz	307	171	180
18	7	Pasteurized process American cheese food	2 oz	323	188	172
19	22	Mozzarella cheese, whole milk	1.5 oz	215	128	168
20	15	Reduced fat chocolate milk (2%)	1 cup	285	180	158
21	21	Blue cheese	1.5 oz	225	150	150
22	4	Fruit yogurt, low fat	10 g protein/ 8 oz	345	232	149
23	17	Chocolate milk	1 cup	280	208	135
24	20	Ricotta cheese, whole milk	1/2 cup	255	214	119

Table A-1.10 Food sources of dairy Calcium ranked by milligrams of Calcium per round caloric serving

per round caloric serving								Calcium/ round caloric serving
Rank	Guidelines Rank	Food	Standard Amount	Calcium/ standard amount	Calories/ standard amount	Round Caloric Serving	% Change	
	1	Fortified ready-to-eat cereals (various)	1 oz	236-1043	88-106	n/a	n/a	n/a
	12	Oatmeal, plain and flavored, instant, fortified	1 packet prepared	99-110	97-157	n/a	n/a	n/a
1	2	Soy beverages, calcium fortified	1 cup	368	98	100	2%	376
2	3	Sardines, Atlantic, in oil, drained	3 oz	325	177	200	13%	367
3	4	Tofu, firm, prepared with nigari	1/2 cup	253	88	100	14%	288
4	7	Molasses, blackstrap	1 Tbsp	172	47	50	6%	183
5	9	Soybeans, green, cooked	1/2 cup	130	127	150	18%	154
6	5	Pink Salmon, canned, with bone	3 oz	181	118	100	-15%	153
7	6	Collards, cooked from frozen	1/2 cup	178	31	25	-19%	144
8	13	Cowpeas, cooked	1/2 cup	106	80	100	25%	133
9	10	Turnip greens, cooked from frozen	1/2 cup	124	24	25	4%	129
10	8	Spinach, cooked from frozen	1/2 cup	146	30	25	-17%	122
11	11	Ocean perch, Atlantic, cooked	3 oz	116	103	100	-3%	113
11	15	Kale, cooked from frozen	1/2 cup	90	20	25	25%	113
12	21	Dandelion greens, cooked from fresh	1/2 cup	74	17	25	47%	109
13	18	Beet greens, cooked from fresh	1/2 cup	82	19	25	32%	108
14	17	Blue crab, canned	3 oz	86	84	100	19%	102
15	14	White beans, canned	1/2 cup	96	153	150	-2%	94
16	20	Clams, canned	3 oz	78	126	150	19%	93
17	16	Soybeans, mature, cooked	1/2 cup	88	149	150	1%	89
18	16	Okra, cooked from frozen	1/2 cup	88	26	25	-4%	85
19	19	Pak-choi, Chinese cabbage, cooked from fresh	1/2 cup	79	10	10	0%	79
20	22	Rainbow trout, farmed, cooked	3 oz	73	144	150	4%	76
	1	Fortified ready-to-eat cereals (various)	1 oz	236-1043	88-106	n/a	n/a	n/a
	12	Oatmeal, plain and flavored, instant, fortified	1 packet prepared	99-110	97-157	n/a	n/a	n/a
Average Change:							1%	

Table A-1.11 Food sources of Vitamin A ranked by milligrams of Vitamin per 100 calories

Rank	Guidelines Rank	Food	Standard Amount	Vitamin A/ standard amount	Calories/ standard amount	Vitamin A/ 100 calories
n/a	1	Organ meats (liver, giblets), various, cooked	:	1490-9126	134-235	n/a
n/a	11	Instant cooked cereal, fortified, prepared	1 packet	285-376	75-97	n/a
n/a	12	Various ready-to-eat cereals, with added vitamin A	1 oz	180-376	100-117	n/a
1	5	Carrots, cooked from fresh	1/2 cup	671	27	2485
2	8	Kale, cooked from frozen	1/2 cup	478	20	2390
3	2	Carrot juice	3 oz	1692	71	2383
4	4	Pumpkin, canned	1 medium	953	42	2269
5	18	Mustard greens, cooked	1/2 cup	221	11	2009
6	6	Spinach, cooked from frozen	1/2 cup	573	30	1910
7	10	Turnip greens, cooked from frozen	1/2 cup	441	24	1838
8	21	Chinese cabbage, cooked	1/2 cup	180	10	1800
9	7	Collards, cooked from frozen	1/2 cup	489	31	1577
10	13	Carrot, raw	1 small	301	20	1505
11	14	Beet greens, cooked	1/2 cup	276	19	1453
12	16	Dandelion greens, cooked	1/2 cup	260	18	1444
13	9	Mixed vegetables, canned	1/2 cup	474	40	1185
14	3	Sweetpotato with peel, baked	3/4 cup	1096	103	1064
15	20	Red sweet pepper, cooked	1/2 cup	186	19	979
16	15	Winter squash, cooked	1/2 cup	268	38	705
17	17	Cantaloupe, raw	1/4 medium	233	46	507
18	19	Pickled herring	3 oz	219	222	99

Table A-1.12 Food sources of Vitamin A ranked by milligrams of Vitamin A per round caloric serving

Round Caloric serving								
Rank	Guidelines Rank	Food	Standard Amount	Vitamin A/ standard amount	Calories/ standard amount	Round Caloric Serving	% Change	Vitamin A/ round caloric serving
	1	Organ meats (liver, giblets), various, cooked		1490-9126	134-235	n/a	n/a	n/a
	11	Instant cooked cereal, fortified, prepared	1 packet	285-376	75-97	n/a	n/a	n/a
	12	Various ready-to-eat cereals, with added vitamin A	1 oz	180-376	100-117	n/a	n/a	n/a
1	2	Carrot juice	3 oz	1692	71	50	-30%	1192
2	4	Pumpkin, canned	1 medium	953	42	50	19%	1135
3	3	Sweetpotato with peel, baked	3/4 cup	1096	103	100	-3%	1064
4	5	Carrots, cooked from fresh	1/2 cup	671	27	25	-7%	621
5	8	Kale, cooked from frozen	1/2 cup	478	20	25	25%	598
6	9	Mixed vegetables, canned	1/2 cup	474	40	50	25%	593
7	6	Spinach, cooked from frozen	1/2 cup	573	30	25	-17%	478
8	10	Turnip greens, cooked from frozen	1/2 cup	441	24	25	4%	459
9	7	Collards, cooked from frozen	1/2 cup	489	31	25	-19%	394
10	13	Carrot, raw	1 small	301	20	25	25%	376
11	14	Beet greens, cooked	1/2 cup	276	19	25	32%	363
12	16	Dandelion greens, cooked	1/2 cup	260	18	25	39%	361
13	15	Winter squash, cooked	1/2 cup	268	38	50	32%	353
14	17	Cantaloupe, raw	1/4 medium	233	46	50	9%	253
15	20	Red sweet pepper, cooked	1/2 cup	186	19	25	32%	245
16	18	Mustard greens, cooked	1/2 cup	221	11	10	-9%	201
17	19	Pickled herring	3 oz	219	222	200	-10%	197
18	21	Chinese cabbage, cooked	1/2 cup	180	10	10	0%	180
Average Change:							8%	

Table A-1.13 Food sources of Magnesium ranked by milligrams of Magnesium per 100 calories

Rank	Guidelines Rank	Food	Standard Amount	Magnesium/standard amount	Calories/standard amount	Magnesium/100 calories
1	7	Spinach, cooked from fresh	1/2 cup	78	20	390
2	6	Spinach, canned	1/2 cup	81	25	324
3	18	Beet greens, cooked	1/2 cup	49	19	258
4	20	Okra, cooked from frozen	1/2 cup	47	26	181
5	3	Bran ready-to-eat cereal (100%)	1 oz	103	74	139
6	17	Artichokes (hearts), cooked	1/2 cup	50	42	119
7	1	Pumpkin and squash seed kernels, roasted	1 oz	151	148	102
8	23	Oat bran, cooked	1/2 cup	44	44	100
9	15	Oat bran, raw	1/4 cup	55	58	95
10	4	Halibut, cooked	3 oz	91	119	76
11	8	Buckwheat flour	1/4 cup	75	101	74
12	12	Pollock, walleye, cooked	3 oz	62	96	65
13	22	Oat bran muffin	1 oz	45	77	58
13	2	Brazil nuts	1 oz	107	186	58
14	5	Quinoa, dry	1/4 cup	89	159	56
15	24	Buckwheat groats, roasted, cooked	1/2 cup	43	78	55
16	20	Tofu, firm, prepared with nigari	1/2 cup	47	88	53
16	13	Black beans, cooked	1/2 cup	60	114	53
16	17	Lima beans, baby, cooked from frozen	1/2 cup	50	95	53
17	9	Soybeans, mature, cooked	1/2 cup	74	149	50
18	7	Almonds	1 oz	78	164	48
18	14	Bulgur, dry	1/4 cup	57	120	48
19	21	Cowpeas, cooked	1/2 cup	46	100	46
19	16	Tuna, yellowfin, cooked	3 oz	54	118	46
20	9	Cashews, dry roasted	1 oz	74	163	45
21	25	Haddock, cooked	3 oz	42	95	44
21	11	White beans, canned	1/2 cup	67	154	44
22	16	Soybeans, green, cooked	1/2 cup	54	127	43
23	23	Great northern beans, cooked	1/2 cup	44	104	42
24	25	Brown rice, cooked	1/2 cup	42	108	39
25	11	Mixed nuts, oil roasted, with peanuts	1 oz	67	175	38
25	19	Navy beans, cooked	1/2 cup	48	127	38
26	10	Pine nuts, dried	1 oz	71	191	37
26	20	Soy beverage	1 cup	47	127	37
27	17	Peanuts, dry roasted	1 oz	50	166	30
28	21	Hazelnuts	1 oz	46	178	26

Table A-1.14 Food sources of Magnesium ranked by milligrams of Magnesium per round caloric serving

Rank	Guidelines Rank	Food	Standard Amount	Magnesium/standard amount	Calories/standard amount	Round Caloric Serving	% Change	Magnesium/round caloric serving
1	1	Pumpkin and squash seed kernels, roasted	1 oz	151	148	150	1%	153
2	2	Brazil nuts	1 oz	107	186	200	8%	115
3	7	Spinach, cooked from fresh	1/2 cup	78	20	25	25%	98
4	5	Quinoa, dry	1/4 cup	89	159	150	-6%	84
5	6	Spinach, canned	1/2 cup	81	25	25	0%	81
6	4	Halibut, cooked	3 oz	91	119	100	-16%	76
7	9	Soybeans, mature, cooked	1/2 cup	74	149	150	1%	74
7	10	Pine nuts, dried	1 oz	71	191	200	5%	74
7	8	Buckwheat flour	1/4 cup	75	101	100	-1%	74
8	7	Almonds	1 oz	78	164	150	-9%	71
9	3	Bran ready-to-eat cereal (100%)	1 oz	103	74	50	-32%	70
10	9	Cashews, dry roasted	1 oz	74	163	150	-8%	68
11	11	White beans, canned	1/2 cup	67	154	150	-3%	65
11	12	Pollock, walleye, cooked	3 oz	62	96	100	4%	65
12	18	Beet greens, cooked	1/2 cup	49	19	25	32%	64
12	16	Soybeans, green, cooked	1/2 cup	54	127	150	18%	64
13	17	Artichokes (hearts), cooked	1/2 cup	50	42	50	19%	60
14	22	Oat bran muffin	1 oz	45	77	100	30%	58
15	11	Mixed nuts, oil roasted, with peanuts	1 oz	67	175	150	-14%	57
15	19	Navy beans, cooked	1/2 cup	48	127	150	18%	57
16	20	Soy beverage	1 cup	47	127	150	18%	56
17	24	Buckwheat groats, roasted, cooked	1/2 cup	43	78	100	28%	55
18	20	Tofu, firm, prepared with nigari	1/2 cup	47	88	100	14%	53
18	13	Black beans, cooked	1/2 cup	60	114	100	-12%	53
18	17	Lima beans, baby, cooked from frozen	1/2 cup	50	95	100	5%	53
19	21	Hazelnuts	1 oz	46	178	200	12%	52
20	23	Oat bran, cooked	1/2 cup	44	44	50	14%	50
21	14	Bulgur, dry	1/4 cup	57	120	100	-17%	48
22	15	Oat bran, raw	1/4 cup	55	58	50	-14%	47
23	21	Cowpeas, cooked	1/2 cup	46	100	100	0%	46
23	16	Tuna, yellowfin, cooked	3 oz	54	118	100	-15%	46
24	20	Okra, cooked from frozen	1/2 cup	47	26	25	-4%	45
24	17	Peanuts, dry roasted	1 oz	50	166	150	-10%	45
25	25	Haddock, cooked	3 oz	42	95	100	5%	44
26	23	Great northern beans, cooked	1/2 cup	44	104	100	-4%	42
27	25	Brown rice, cooked	1/2 cup	42	108	100	-7%	39
				Average Change:			2%	

APPENDIX 2: NUTRITIONAL UNITS AS REFERENCE UNITS FOR FOOD LABELING

Examples of nutritional and other information stated relative to a caloric or CENTICAL reference unit

The following examples show the current nutrition labels of five different products, sold in the United Kingdom and in the United States, and various alternative labeling options that state different types of information relative to nutritionally relevant reference units. Note that in order to construct the new labels various calculations were performed on the values in the original labels. In some cases, and by way of example, these values were sometimes rounded and sometimes not, as regulations in different countries make different requirements in this respect.

Example No. 1: Cheetos Crunchy

The Cheetos Crunchy package shown in Fig. 1 contains 10oz of product. The information on the label currently states the macro and micronutrient content per serving, which is defined as 1 oz of product.

Since the package contains a multiple of 100 calories ($160 \text{ calories/serving} \times 10 \text{ servings/package} = 1600 \text{ calories/package}$), the product fits into the CENTICAL method as is. Figures 2-11 show different ways of stating nutritional and other information on the package relative to caloric reference units. These labeling options may be used either within the framework of the CENTICAL system or independently.



Ingredients: Enriched Corn Meal (Corn Meal, Ferrous Sulfate, Niacin, Thiamin Mononitrate, Riboflavin, and Folic Acid), Vegetable Oil (Contains One or More of the Following: Corn, Soybean, or Sunflower Oil), Whey, Salt, Cheddar Cheese (Cultured Milk, Salt, Enzymes), Partially Hydrogenated Soybean Oil, Maltodextrin, Disodium Phosphate, Sour Cream (Cultured Cream, Nonfat Milk), Artificial Flavor, Monosodium Glutamate, Lactic Acid, Artificial Colors (Including Yellow 6), and Citric Acid. **CONTAINS MILK INGREDIENTS.**

Nutrition Facts	
Serving Size 1 oz. (28g/About 21 pieces)	
Servings Per Container About 10	
Amount Per Serving	
Calories 160	Calories from Fat 90
% Daily Values*	
Total Fat 10g	16%
Saturated Fat 1.5g	3%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 280mg	12%
Total Carbohydrate 15g	5%
Dietary Fiber less than 1g	1%
Sugars 1g	
Protein 2g	
Vitamin A 0%	Vitamin C 0%
Calcium 0%	Iron 4%
Vitamin E 6%	Thiamin 4%
Riboflavin 4%	Niacin 4%
Phosphorus 2%	
*Percent Daily Values are based on a diet of other people's secrets.	
	Calories: 2,000 2,500
Total Fat	Less than 65g 65g
Sat Fat	Less than 20g 20g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9	Carbohydrate 4 Protein 4

Figure 1: Cheetos Crunchy, current label

Front of package marking
within the CENTICAL method:

1600 Calories

N u t r i t i o n F a c t s

Total Calories 1600

Serving Size 160 calories (about 21 pieces)

Servings Per Container about 10

Amount Per Serving

Weight 1oz (28g) **Calories from Fat 90**

% Daily Value*

Total Fat 10g	16%
Saturated Fat 1.5g	8%
Trans Fats 0g	
Cholesterol 0mg	0%
Sodium 290mg	12%
Total Carbohydrate 15g	5%
Dietary Fiber less than 1g	1%
Sugars 1g	
Protein 2g	
Vitamin A 0%	• Vitamin C 0%
Calcium 0%	• Iron 4%
Vitamin E 6%	• Thiamin 4%
Riboflavin 4%	• Niacin 4%
Phosphorus 2%	

* Percent Daily values are based on a 2,000 calorie diet.
Your daily values may be higher or lower depending on your
calorie needs:

	Calories:	2,000	2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g
Calories per gram			
Fat 9	• Carbohydrate 4		Protein 4

Figure 2: Cheetos Crunchy, option 1 -- macro and micronutrient content and weight are stated relative to a serving defined in caloric units, which is not a multiple of 100 calories

As in the original label, option 1 states macro and micronutrient content per serving containing ~21 pieces. However, whereas the original label defines the serving in weight units (1oz), the label in option 1 defines the serving in caloric units (160 calories). The leading message in the label is therefore caloric.

Nutrition Facts			
Total Calories 1600			
Serving Size 100 calories (about 13 pieces)			
Servings Per Container about 16			
Amount Per 100 Calories Serving			
Weight 0.62oz (17g)		Calories from Fat 56	
% Daily Value*			
Total Fat 6g		10%	
Saturated Fat 0.9g		5%	
Trans Fats 0g.			
Cholesterol 0mg		0%	
Sodium 181mg		7%	
Total Carbohydrate 9g		3%	
Dietary Fiber less than 1g		1%	
Sugars 1g			
Protein 1g			
Vitamin A 0%		• Vitamin C 0%	
Calcium 0%		• Iron 3%	
Vitamin E 4%		• Thiamin 3%	
Riboflavin 3%		• Niacin 3%	
Phosphorus 1%			
* Percent Daily values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g
Calories per gram			
Fat 9	• Carbohydrate 4	Protein 4	

Front of package marking
within the CENTICAL method:

1600 Calories

Figure 3: Cheetos Crunchy, option 2 -- macro and micronutrient content and weight are stated relative to a serving defined in caloric units, which is a multiple of 100 calories

As in the original label and in option 1, option 2 states macro and micronutrient content and weight per serving. However, in this case, the serving is not merely defined in caloric units – its size is reset to a multiple of 100 calories. The leading message in the label is therefore caloric and each basic serving as well as the entire package conform to the CENTICAL method.

Nutrition Facts		
Total Calories 1600		
About 210 pieces		
Amount Per Container		
Weight 10oz (280g)	Calories from Fat 900	
	% Daily Value*	
Total Fat 100g	160%	
Saturated Fat 15g	80%	
Trans Fats 0g.		
Cholestrol 0mg	0%	
Sodium 2900mg	120%	
Total Carbohydrate 150g	50%	
Dietary Fiber less than 10g	10%	
Sugars 10g		
Protein 20g		
Vitamin A 0%	• Vitamin C 0%	
Calcium 0%	• Iron 40%	
Vitamin E 60%	• Thiamin 40%	
Riboflavin 40%	• Niacin 40%	
Phosphorus 20%		
* Percent Daily values are based on 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
	Calories:	2,000 2,500
Total Fat	Less Than	65g 80g
Sat Fat	Less Than	20g 25g
Cholesterol	Less Than	300mg 300mg
Sodium	Less Than	2,400mg 2,400mg
Total Carbohydrates		300g 375g
Fiber		25g 30g
Calories per gram		
Fat 9	• Carbohydrate 4	• Protein 4

Front of package marking
within the CENTICAL method:

1600 Calories

Figure 4: Cheetos Crunchy, option 3 -- macro and micronutrient content and weight are stated per container, where the leading message is the total caloric content of the package, given in calories

Option 3 does not define a serving size at all. Rather, the leading message is the caloric content of the entire package and that is the reference unit used for all the additional information. (That is because eating an entire pack of snacks in one eating session by one individual is a common scenario).

Nutrition Facts			
Total CENTICALs 16			
Serving Size 1 CENTICAL (about 13 pieces)			
Servings Per Container about 16			
Amount Per 1 CENTICAL			
Weight 0.62oz (17g)	CENTICALs from Fat 0.56		
% Daily Value*			
Total Fat 6g	10%		
Saturated Fat 0.9g	5%		
Trans Fats 0g.			
Cholestrol 0mg	0%		
Sodium 181mg	7%		
Total Carbohydrate 9g	3%		
Dietary Fiber less than 1g	1%		
Sugars 1g			
Protein 1g			
Vitamin A 0%	• Vitamin C 0%		
Calcium 0%	• Iron 3%		
Vitamin E 4%	• Thiamin 3%		
Riboflavin 3%	• Niacin 3%		
Phosphorus 1%			
* Percent Daily values are based on a 20 CENTICAL diet. Your daily values may be higher or lower depending on your calorie needs:			
	CENTICALs:	20	25
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g
Calories per gram			
Fat 9	• Carbohydrate 4	•	Protein 4

Front of package marking within the CENTICAL method:

16 CENTICALs

Figure 5: Cheetos Crunchy, option 4 -- macro and micronutrient content and weight are stated relative to a serving defined in CENTICAL units (1 CENTICAL)

Option 6 is the same as option 2, stating macro and micronutrient content and weight relative to a serving defined in caloric units and set to a multiple of 100 calories. However, whereas option 2 defines the serving in calories, option 4 defines the same serving size in CENTICAL units. Recommended daily values are also stated relative to caloric budgets given in CENTICAL units.

Nutrition Facts			
Total CENTICALs 16			
About 210 pieces			
Amount Per Container			
Weight 10oz (280g)	CENTICALs from fat 9		
	% Daily Value*		
Total Fat 100g	160%		
Saturated Fat 15g	80%		
Trans Fats 0g.			
Cholestrol 0mg	0%		
Sodium 2900mg	120%		
Total Carbohydrate 150g	50%		
Dietary Fiber less than 10g	10%		
Sugars 10g			
Protein 20g			
Vitamin A 0%	• Vitamin C 0%		
Calcium 0%	• Iron 40%		
Vitamin E 60%	• Thiamin 40%		
Riboflavin 40%	• Niacin 40%		
Phosphorus 20%			
* Percent Daily values are based on 20 CENTICAL diet. Your daily values may be higher or lower depending on your centical needs:			
	CENTICALs:	20	25
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g
Calories per gram			
Fat 9	• Carbohydrate 4		Protein 4

Front of package marking within the CENTICAL method:

16 CENTICALs

Figure 6: Cheetos Crunchy, option 5 -- macro and micronutrient content and weight are stated per container, where the leading message is the total caloric content of the package, given in CENTICALs

Option 5 is the same as option 3, stating macro and micronutrient content and weight per container, defined in caloric units. However, whereas option 3 defines the total content in calories, option 5 defines the same content in CENTICAL units. Recommended daily values are also stated relative to caloric budgets given in CENTICAL units.

Nutrition Facts				
Total Calories 1600				
Serving Size 160 calories (about 21 pieces)			Calories from fat/serving 90	
Servings Per Container about 10			Calories from fat/100cals 56	
	Per Serving	Per 100 Calories		
Weight	1oz (28g)	0.62oz (17g)		
Price	\$0.36	\$0.22		
% Daily Value*				
Amount		Per Serving	Per 100 Calories	
Total Fat	10g	6g	16%	10%
Saturated Fat	1.5g	0.9g	8%	5%
Trans Fats	0g	0g		
Cholestrol	0mg	0mg	0%	0%
Sodium	290mg	181mg	12%	7%
Total Carbs	15g	9g	5%	3%
Dietary Fiber	less than 1g	less than 1g	1%	1%
Sugars	1g	0.6g		
Protein	2g	1g		
Vitamin A			0%	0%
Calcium			0%	0%
Vitamin E			6%	4%
Riboflavin			4%	3%
Phosphorus			2%	1%
Vitamin C			0%	0%
Iron			4%	3%
Thlamin			4%	3%
Niacin			4%	3%
* Percent Daily values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:				
	Calories:	2,000	2,500	
Total Fat	Less Than	65g	80g	
Sat Fat	Less Than	20g	25g	
Cholest	Less Than	300mg	300mg	
Sodium	Less Than	2,400mg	2,400mg	
Total Carb		300g	375g	
Fiber		25g	30g	
Calories per gram				
Fat 9	Carbohydrate 4		Protein 4	

Figure 7: Cheetos Crunchy, option 6 -- macro and micronutrient content, weight and price are stated both relative to a serving defined in caloric units, which is not a multiple of 100 calories, and per 100 calories.

Option 6 states macro and micronutrient content, weight and price per 160-calories portion and per 100 calories. The leading message in the label is

therefore caloric. In addition to the number of calories from fat, protein and carbohydrates per gram of product, the number of calories from fat is stated per 100 calories of product.

Nutrition Facts				
Total CENTICALS 1600			CENTICALS from Fat/serving: 0.9	
Serving Size 1.5 CENTICALS (about 21 pieces)			CENTICALS from Fat/CENTICAL: 0.56	
Servings Per Container about 10				
	Per Serving	Per CENTICAL		
Weight	1oz (28g)	0.62oz (17g)		
Price	\$0.36	\$0.22		
% Daily Value*				
Amount			Per Serving	Per CENTICAL
Total Fat	10g	6g	16%	10%
Saturated Fat	1.5g	0.9g	8%	5%
Trans Fats	0g	0g		
Cholestrol	0mg	0mg	0%	0%
Sodium	290mg	181mg	12%	7%
Total Carbs	15g	9g	5%	3%
Dietary Fiber	less than 1g	less than 1g	1%	1%
Sugars	1g	0.6g		
Protein	2g	1g		
Vitamin A			0%	0%
Calcium			0%	0%
Vitamin E			6%	4%
Riboflavin			4%	3%
Phosphorus			2%	1%
Vitamin C			0%	0%
Iron			4%	3%
Thiamin			4%	3%
Niacin			4%	3%
* Percent Daily values are based on a 20-CENTICAL diet. Your daily values may be higher or lower depending on your calorie needs:				
	CENTICALS		20	25
Total Fat	Less Than		65g	80g
Sat Fat	Less Than		20g	25g
Cholest	Less Than		300mg	300mg
Sodium	Less Than		2,400mg	2,400mg
Total Carb			300g	375g
Fiber			25g	30g
Calories per gram				
Fat 9		Carbohydrate 4		Protein 4

Figure 8: Cheetos Crunchy, option 7 -- macro and micronutrient content, weight and price are stated both relative to a serving defined in CENTICALS which is not a multiple of CENTICALS, and per CENTICAL.

Option 7 is the same as option 6, except that caloric values are stated in CENTICALS rather than in calories.

Nutrition Facts					
Total Calories 1600					
Serving Size 160 calories (about 21 pieces)					
Servings Per Container about 10					
Amount	Per Serving	Per 100 Calories	Per Serving	Per 100 Calories	Per 100
Weight	1oz (28g)	0.62oz (17g)			
Price	\$0.36	\$0.22			
% Daily Value*					
Total Fat	10g	6g	16%	10%	
Saturated Fat	1.5g	0.9g	8%	5%	
Trans Fats	0g	0g			
Cholesterol	0mg	0mg	0%	0%	
Sodium	290mg	181mg	12%	7%	
Total Carbs	15g	9g	5%	3%	
Dietary Fiber	less than 1g	less than 1g	1%	1%	
Sugars	1g	0.6g			
Protein	2g	1g			
Vitamin A	0%	0%	Vitamin C	0%	0%
Calcium	0%	0%	Iron	4%	3%
Vitamin E	6%	4%	Thiamin	4%	3%
Riboflavin	4%	3%	Niacin	4%	3%
Phosphorus	2%	1%			
* Percent Daily values are based on 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:					
Calories:		2,000	2,500		
Total Fat	Less Than	65g	80g		
Sat Fat	Less Than	20g	25g		
Cholest	Less Than	300mg	300mg		
Sodium	Less Than	2,400mg	2,400mg		
Total Carb		300g	375g		
Fiber		25g	30g		
Calories from Fat/Carbohydrate/Protein per 100 Calories					
Fat 54	•	Carbohydrate 36	•	Protein 4	
Calories from Fat/Carbohydrate/Protein per serving					
Fat 90	•	Carbohydrate 60	•	Protein 8	

Figure 9: Cheetos Crunchy, option 8 -- macro and micronutrient content, weight, price and calories from fat/carbohydrate/protein are stated both relative to a serving defined in calories which is not a multiple of 100 calories, and per 100 calories.

Option 8 is the same as option 6, except that calories from fat/carbohydrate/protein are not stated per gram but per 100 calories and per serving defined in caloric units, in line with the rest of the label.

Nutrition Facts					
Total CENTICALS 16					
Serving Size 1.6 CENTICALS (about 21 pieces)					
Servings Per Container about 10					
Amount	Per Serving	Per CENTICAL	Per Serving	Per CENTICAL	
Weight	1oz (28g)	0.62oz (17g)			
Price	\$0.36	\$0.22			
% Daily Value*					
Total Fat	10g	6g	16%	10%	
Saturated Fat	1.5g	0.9g	8%	5%	
Trans Fats	0g	0g			
Cholesterol	0mg	0mg	0%	0%	
Sodium	290mg	181mg	12%	7%	
Total Carbs	15g	9g	5%	3%	
Dietary Fiber	less than 1g	less than 1g	1%	1%	
Sugars	1g	0.6g			
Protein	2g	1g			
Vitamin A	0%	0%	Vitamin C	0%	0%
Calcium	0%	0%	Iron	4%	3%
Vitamin E	6%	4%	Thiamin	4%	3%
Riboflavin	4%	3%	Niacin	4%	3%
Phosphorus	2%	1%			
* Percent Daily values are based on a 20 CENTICAL diet. Your daily values may be higher or lower depending on your calorie needs:					
	CENTICALS:	20	25		
Total Fat	Less Than	65g	80g		
Sat Fat	Less Than	20g	25g		
Cholest	Less Than	300mg	300mg		
Sodium	Less Than	2,400mg	2,400mg		
Total Carb		300g	375g		
Fiber		25g	30g		
Calories from Fat/Carbohydrate/Protein per CENTICAL					
Fat 54	•	Carbohydrate 36	•	Protein 4	
Calories from Fat/Carbohydrate/Protein per serving					
Fat 90	•	Carbohydrate 60	•	Protein 8	

Figure 10: Cheetos Crunchy, option 9 -- macro and micronutrient content, weight, price and calories from fat/carbohydrate/protein are stated both relative to a serving defined in calories which is not a multiple of CENTICALS, and per CENTICAL.

Option 9 is the same as option 8, except that caloric values are given in CENTICALS rather than in calories.

Nutrition Facts				
Total CENTICALs 16				
Serving Size 1.6 CENTICALs (about 21 pieces)				
Servings Per Container about 10				
Amount	Per Serving	Per CENTICAL	Per Serving	Per CENTICAL
Weight	1oz (28g)	0.62oz (17g)		
Price	\$0.36	\$0.22		
% Daily Value*				
Total Fat	10g	6g	16%	10%
Saturated Fat	1.5g	0.9g	8%	5%
Trans Fats	0g	0g		
Cholesterol	0mg	0mg	0%	0%
Sodium	290mg	181mg	12%	7%
Total Carbs	15g	9g	5%	3%
Dietary Fiber	less than 1g	less than 1g	1%	1%
Sugars	1g	0.6g		
Protein	2g	1g		
Vitamin A	0%	0%	Vitamin C	0%
Calcium	0%	0%	Iron	4%
Vitamin E	6%	4%	Thiamin	4%
Riboflavin	4%	3%	Niacin	4%
Phosphorus	2%	1%		
* Percent Daily values are based on a 20 CENTICAL diet. Your daily values may be higher or lower depending on your calorie needs:				
CENTICALS:		20	25	
Total Fat	Less Than	65g	80g	
Sat Fat	Less Than	20g	25g	
Cholest	Less Than	300mg	300mg	
Sodium	Less Than	2,400mg	2,400mg	
Total Carb		300g	375g	
Fiber		25g	30g	
CENTICALs from Fat/Carbohydrate/Protein per CENTICAL				
Fat 0.54	•	Carbohydrate 0.36	•	Protein 0.04
CENTICALs from Fat/Carbohydrate/Protein per serving				
Fat 0.9	•	Carbohydrate 0.6	•	Protein 0.08

Figure 11: Cheetos Crunchy, option 10 -- macro and micronutrient content, weight, price and CENTICALs from fat/carbohydrate/protein are stated both relative to a serving defined in calories which is not a multiple of CENTICALs, and per CENTICAL.

Option 10 is the same as option 9, except that energy from fat/carbohydrate/protein per CENTICAL and per serving is stated in CENTICALs and not in calories.

Example No. 2: Marks & Spencer's All Butter Apple and Cinnamon Bites

The Marks & Spencer All Butter Apple and Cinnamon Bites package contains 200g of product, equal to ~20 biscuits. Figure 7 shows the information copied from the current product labeling. The current labels state the total weight of the package and the macro and micronutrient content per 100g and per serving (biscuit).

Nutrition			
Typical Values	Per 100g	Per Biscuit	
Energy kJ	2125	210	
kcal	510	50	
Protein g	5.5	0.6	
Carbohydrate g	64.6	6.5	
of which sugars g	16.8	1.7	
Fat g	25.2	2.5	
of which saturated g	16.4	1.6	
Fibre g	2.1	0.2	
Sodium g	0.26	0.03	
Equivalent as salt g	0.7	0.1	

200 g e

Guideline Daily Amounts			
Recommended by nutrition professionals for average adults			
	Per Biscuit	Woman	Man
Calories	50	2000	2500
Fat g	2.5	70	95
Salt g	0.1	5	7

Figure 12: Marks & Spencer All Butter Apple and Cinnamon Bites, current label

Since each biscuit contains a multiple of 50 calories, the product fits as is into the CENTICAL method. Figures 13-14 show different ways of stating nutritional and other information on the package relative to caloric reference units. These labeling options may be used either within the framework of the CENTICAL system or independently. Note that according to the current label, 100g of product contain 510 calories, i.e., the entire 200g package contains 1020 calories. Since each biscuit contains 50 calories, this would mean that the number of biscuits in the package is not an integer. An alternative explanation would be that while each biscuit contains 51 calories the value was rounded down to 50, which is permissible according to the relevant British law. In the following calorie-based labeling options the total caloric content of the package is accordingly rounded down to 1000.

Nutrition			
Typical Values		Per 100 calories	Per Biscuit
Energy	Kcal		50
	KJ	420	210
No. of units		2	1
Weight		20g	10g
Protein g		1.2	0.6
Carbohydrate g		13	6.5
of which sugars g		3.4	1.7
Fat g		5	2.5
of which saturated g		3.2	1.6
Fibre g		0.4	0.2
Sodium g		0.06	0.03
Equivalent as salt g		0.2	0.1

Front of package marking within the CENTICAL method:

1000 calories
or
20 (cookies) ×
50 calories

Guideline Daily Amounts			
Recommended by nutrition professionals for average adults			
Per 100 Calories (2 U.)		Per Biscuit	Woman
Calories		50	2000
Weight 20g		10g	2500
Fat g 5.0		2.5	70
Salt g 0.2		0.1	5

Figure 13: Marks & Spencer All Butter Apple and Cinnamon Bites, Option 1: Information is given per 100 calories and per biscuit with a caloric content that is a multiple of 50 calories

As in the original label, option 1 states macro and micronutrient content and weight per biscuit, which happens to contain 50 calories. But whereas the original label states macro and micronutrient content and weight also per 100g, option 1 states macro and micronutrient content and weight per 100 calories. The leading message is therefore caloric.

Front of package marking
within the CENTICAL method

10 CENTICALS
or
20 (cookies) × 0.5
CENTICAL:

Nutrition		
Typical Values	Per CENTICAL	Per Biscuit
Energy CENTICALS		0.5
KJ	420	210
No. of units	2	1
Weight	20g	10g
Protein g	1.2	0.6
Carbohydrate g	13	6.5
of which sugars g	3.4	1.7
Fat g	5	2.5
of which saturated g	3.2	1.6
Fibre g	0.4	0.2
Sodium g	0.06	0.03
Equivalent as salt g	0.2	0.1

Guideline Daily Amounts			
Recommended by nutrition professionals for average adults			
Per 1 CENTICAL (2 U.)		Per Biscuit	
		Woman	Man
CENTICALS		0.5	20
Weight	20g	10g	25
Fat g	5.0	2.5	70
Salt g	0.2	0.1	5

Figure 14: Marks & Spencer All Butter Apple and Cinnamon Bites, Option 2: Information is given per 1 CENTICAL and per serving, which is a well-defined consumption unit with a 0.5 CENTICAL caloric content

Option 2 is the same as option 1, except that caloric values are stated in CENTICALs rather than in calories. The leading message therefore has a CENTICAL focus.

Example No. 3: Tesco Bran Flakes Healthy Living

The Tesco Bran Flakes Healthy Living package contains 500g of product. Figure 15 shows the information copied from the current product labeling. The current labels state the total weight of the package and the macro and micronutrient content per serving (defined as 30g) of the product with 125ml semi-skimmed milk, and per 100g.

Allergy Advice		
<ul style="list-style-type: none"> Contains wheat, gluten This Product may contain traces of nuts, as it has been made in a factory that uses nut ingredients. 		
Suitable for vegetarians		
Ingredients		
Wheat, Wheat Bran, Sugar, Malt Extract, Salt, Niacin, Iron, Pantothenic Acid, Thiamin, Riboflavin, Vitamin B ₆ , Folic Acid, Vitamin D, Vitamin B ₁₂ .		
Nutrition		
A 30g serving of Healthy Living Bran Flakes 500g typically contains at least 30% of the recommended daily allowance of Vitamin D, Thiamin (B ₁), Riboflavin (B ₂), Niacin, Vitamin B ₆ , Folic Acid, Vitamin B ₁₂ , Pantothenic Acid and Iron.		
Typical Composition	A 30g (1oz) serving with 125ml semi-skimmed milk provides	100g (3 1/2oz) provide
Energy	671kJ 159kcal*	1403kJ 331kcal
Protein	7.2g	10.2g
Carbohydrate	26.4g	67.1g
of which sugars	11.4g	17.2g
Fat	2.7g*	2.4g
of which saturates	1.5g	0.5g
Fibre**	4.2g	14.1g
Sodium	0.3g	0.6g
Vitamines/Minerals		
Vitamin D	1.5 µg (30% RDA)	5.0 µg (100% RDA)
Thiamin (B ₁)	0.5mg (34% RDA)	1.4mg (100% RDA)
Riboflavin (B ₂)	0.7mg (44% RDA)	1.6mg (100% RDA)
Niacin	6.5mg (36% RDA)	18.0mg (100% RDA)
Vitamin B ₆	0.7mg (34% RDA)	2.0mg (100% RDA)
Folic Acid	127.5µg (64% RDA)	400.0µg (200% RDA)
Vitamin B ₁₂	0.8µg (80% RDA)	1.0µg (100% RDA)
Pantothenic Acid	2.2mg (37% RDA)	6.0mg (100% RDA)
Iron	4.3mg (30% RDA)	14.0mg (100% RDA)
RDA = Recommended Daily Allowance		

This pack contains 16 servings.

A serving (30g) contains the equivalent of approx. 0.7g of salt.

* Calories/Fat per serving with whole milk: 183kcal/5.6g

Calories/Fat per serving with skimmed milk: 142kcal/0.8g

** Fibre has been determined by AOAC analysis.

Guideline daily amounts

Each day	Women	Men	Per serving
Calories	2000	2500	159
Fat	70.0g	95.0g	2.7g
Salt	5.0g	7.0g	0.7g

These figures are for average adults of normal weight.

Your own requirements will vary with age, size and activity level.

As calculated by Tesco

Per serving
2 1/2*

using information published by Weight Watchers Int'l Inc. for consumer information only. This product is not endorsed or sponsored by Weight Watchers Int'l Inc., the owner of the Points® trademark.

* using semi-skimmed milk

Storage

- Store in a cool, dry place.
- To retain freshness fold over inner bag after use.
- Best before end: see top of pack.

Additional information

- Contents may settle during transit.

500g e

Figure 15: Tesco, Bran Flakes Healthy Living 500g, current label

Since each 30g serving contains a multiple of 100 calories, the product as is conforms in part to the CENTICAL method. Figures 16-19 show different ways of stating nutritional and other information on the package relative to caloric reference units. These labeling options may be used either within the framework of the CENTICAL system or independently.

A Allergy Advice

- Contains wheat, gluten
- This Product may contain traces of nuts, as it has been made in a factory that uses nut ingredients.

V Suitable for vegetarians**Ingredients**

Wheat, Wheat Bran, Sugar, Malt Extract, Salt
 Niacin, Iron, Pantothenic Acid, Thiamin, Riboflavin,
 Vitamin B₆, Folic Acid, Vitamin D, Vitamin B₁₂

Nutrition

Total Calories 1655. A 100 calories (30g) serving of Healthy Living Bran Flakes typically contains at least 30% of the recommended daily allowance of Vitamin D, Thiamin (B₁), Riboflavin (B₂), Niacin, Vitamin B₆, Folic Acid, Vitamin B₁₂, Pantothenic Acid and Iron.

Typical Composition Weight	100 provide 30g	calories Energy	A 100-calories (30g/1oz) serving with 59 calories (125ml) skimmed provides 671kJ 159kcal*
Protein	3g		7.2g
Carbohydrate	20.1g		26.4g
of which sugars	5.2g		11.4g
Fat	0.72g		2.7g*
of which saturates	0.2g		1.5g
Fibre**	4.2g		4.2g
Sodium	0.2g		0.3g
Vitamines/Minerals			
Vitamin D	1.5µg (30% RDA)		1.5 µg (30% RDA)
Thiamin (B ₁)	0.4mg (30% RDA)		0.5mg (34% RDA)
Riboflavin (B ₂)	0.5mg (30% RDA)		0.7mg (44% RDA)
Niacin	5.4mg (30% RDA)		6.5mg (36% RDA)
Vitamin B ₆	0.6mg (30% RDA)		0.7mg (34% RDA)
Folic Acid	120.0µg (60% RDA)		127.5µg (64% RDA)
Vitamin B ₁₂	0.3µg (30% RDA)		0.8µg (80% RDA)
Pantothenic Acid	1.8mg (30% RDA)		2.2mg (37% RDA)
Iron	4.2mg (30% RDA)		4.3mg (30% RDA)

RDA = Recommended Daily Allowance

This pack contains 16 servings.

A serving of 100 calories (30g) contains the equivalent of approx. 0.7g of salt.

* Calories/Fat per serving with whole milk: 183kcal/5.6g

Calories/Fat per serving with skimmed milk: 142kcal/0.8g

** Fibre has been determined by AOAC analysis.

Guideline daily amounts

Each day Women Men Per serving

Calories	2000	2500	159
Fat	70.0g	95.0g	2.7g
Salt	5.0g	7.0g	0.7g

These figures are for average adults of normal weight.
Your own requirements will vary with age, size and activity level.

per serving
2 1/2*

As calculated by Tesco
using information published by
Weight Watchers Int'l Inc. for consumer
information only. This product is not
endorsed or sponsored by Weight
Watchers Int'l Inc., the owner of the
Points® trademark.
* using semi-skimmed milk

Storage

- Store in a cool, dry place.
- To retain freshness fold over inner bag after use.
- Best before end: see top of pack.

Additional Information

- Contents may settle during transit.

1655 Calories **500g e**

Figure 16: Tesco, Bran Flakes Healthy Living Option 1 -- Information is stated per 100 calories of product and per 100 calories of product with 59 calories of semi-skimmed milk

The leading message in option 1 is caloric. As in the original label, there is a statement of macro and micronutrient content per serving (30g or 100 calories in both cases) with a serving of milk (125ml or 59 calories in both cases). However, whereas in the original label the servings are defined in weight and volume units, in option 1 they are defined in caloric units. Further, instead of stating macro and micronutrient content per 100gr of product, option 1 states the nutritional content per 100 calories of product, which happens to be the defined serving size. Further, the total content of the package is stated in calories and not only in weight units.

• Contains wheat, gluten

• This Product may contain traces of nuts, as it has been made in a factory that uses nut ingredients.

V Suitable for vegetarians

Ingredients

Wheat, Wheat Bran, Sugar, Malt Extract, Salt, Niacin, Iron, Pantothenic Acid, Thiamin, Riboflavin, Vitamin B₆, Folic Acid, Vitamin D, Vitamin B₁₂

Nutrition

Total CENTICALs: 16.55. 1 CENTICAL (30g) serving of Healthy Living Bran Flakes typically contains at least 30% of the recommended daily allowance of Vitamin D, Thiamin (B₁), Riboflavin (B₂), Niacin, Vitamin B₆, Folic Acid, Vitamin B₁₂, Pantothenic Acid and Iron.

Typical Composition	1 CENTICAL provides	1 CENTICAL (30g/1oz) serving with 0.59 CENTICAL (125ml) semi-skimmed milk provides
Weight	30g	Energy 671kJ 159kcal*
Protein	3g	7.2g
Carbohydrate	20.1g	26.4g
of which sugars	5.2g	11.4g
Fat	0.72g	2.7g*
of which saturates	0.2g	1.5g
Fibre**	4.2g	4.2g
Sodium	0.2g	0.3g
Vitamines/Minerals		
Vitamin D	1.5µg (30% RDA)	1.5 µg (30% RDA)
Thiamin (B ₁)	0.4mg (30% RDA)	0.5mg (34% RDA)
Riboflavin (B ₂)	0.5mg (30% RDA)	0.7mg (44% RDA)
Niacin	5.4mg (30% RDA)	6.5mg (36% RDA)
Vitamin B ₆	0.6mg (30% RDA)	0.7mg (34% RDA)
Folic Acid	120.0µg (60% RDA)	127.5µg (64% RDA)
Vitamin B ₁₂	0.3µg (30% RDA)	0.8µg (80% RDA)
Pantothenic Acid	1.8mg (30% RDA)	2.2mg (37% RDA)
Iron	4.2mg (30% RDA)	4.3mg (30% RDA)

RDA = Recommended Daily Allowance

This pack contains 16 servings.

A serving of 1 CENTICAL (30g) contains the equivalent of approx. 0.7g of salt.

* CENTICALs/Fat per serving with whole milk: 1.83kcal/5.6g

CENTICALs/Fat per serving with skimmed milk: 1.42kcal/0.8g

** Fibre has been determined by AOAC analysis.

Guideline daily amounts

Each day	Women	Men	Per serving
CENTICALs	20	25	1.59

Fat	70.0g	95.0g	2.7g
Salt	5.0g	7.0g	0.7g

These figures are for average adults of normal weight.
Your own requirements will vary with age, size and activity level.



As calculated by Tesco
using information published by
Weight Watchers Int'l Inc. for consumer
information only. This product is not
endorsed or sponsored by Weight
Watchers Int'l Inc., the owner of the
Points® trademark.

* using semi-skimmed milk

Storage

- Store in a cool, dry place.
- To retain freshness fold over inner bag after use.
- Best before end: see top of pack.

Additional Information

- Contents may settle during transit.

16.55 CENTICALS

500g e

Figure 17: Tesco, Bran Flakes Healthy Living Option 2 -- Information is stated per 1 CENTICAL of product (which equals one serving) and per 1 CENTICAL of product with 0.59 CENTICALs of semi-skimmed milk. Guideline daily amounts are also stated relative a daily caloric budget given in CENTICAL units.

Option 2 is the same as option 1, except that CENTICAL units are used instead of calories.

• Contains wheat, gluten

• This Product may contain traces of nuts, as it has been made in a factory that uses nut ingredients.

V Suitable for vegetarians

Ingredients

Wheat, Wheat Bran, Sugar, Malt Extract, Salt, Niacin, Iron, Pantothenic Acid, Thiamin, Riboflavin, Vitamin B₆, Folic Acid, Vitamin D, Vitamin B₁₂.

Nutrition

Total CENTICALS 16. 1 CENTICAL (30g) serving of Healthy Living Bran Flakes typically contains at least 30% of the recommended daily allowance of Vitamin D, Thiamin (B₁), Riboflavin (B₂), Niacin, Vitamin B₆, Folic Acid, Vitamin B₁₂, Pantothenic Acid and Iron.

Typical Composition	1 CENTICAL provides	1 CENTICAL (30g/1oz) serving with 0.5 CENTICALs (106ml) skimmed milk
Weight	30g	632kJ 150kcal*
Protein	3g	6.5g
Carbohydrate	20.1g	25.4g
of which sugars	5.2g	10.4g
Fat	0.72g	2.4g*
of which saturates	0.2g	1.3g
Fibre**	4.2g	4.2g
Sodium	0.2g	0.3g
Vitamines/Minerals		
Vitamin D	1.5µg (30% RDA)	1.5 µg (30% RDA)
Thiamin (B ₁)	0.4mg (30% RDA)	0.5mg (34% RDA)
Riboflavin (B ₂)	0.5mg (30% RDA)	0.7mg (44% RDA)
Niacin	5.4mg (30% RDA)	6.3mg (35% RDA)
Vitamin B ₆	0.6mg (30% RDA)	0.7mg (34% RDA)
Folic Acid	120.0µg (60% RDA)	126.3µg (63% RDA)
Vitamin B ₁₂	0.3µg (30% RDA)	0.7µg (72% RDA)
Pantothenic Acid	1.8mg (30% RDA)	2.1mg (36% RDA)
Iron	4.2mg (30% RDA)	4.3mg (30% RDA)

RDA = Recommended Daily Allowance

This pack contains 16 CENTICAL servings.

A serving of 1 CENTICAL (30g) contains the equivalent of approx. 0.7g of salt.

* CENTICALs/Fat per serving with whole milk: 2.0kcal/5.6g

CENTICALs/Fat per serving with skimmed milk: 1.5kcal/0.8g

** Fibre has been determined by AOAC analysis.

Guideline daily amounts

Each day	Women	Men	Per serving
----------	-------	-----	-------------

CENTICALS	20	25	1.5
Fat	70.0g	95.0g	2.5g
Salt	5.0g	7.0g	0.7g

These figures are for average adults of normal weight.
Your own requirements will vary with age, size and activity level.

per serving
2 1/2*

As calculated by Tesco
using information published by
Weight Watchers Int'l Inc. for consumer
information only. This product is not
endorsed or sponsored by Weight
Watchers Int'l Inc., the owner of the
Points® trademark.
* using semi-skimmed milk

Storage

- Store in a cool, dry place.
- To retain freshness fold over inner bag after use.
- Best before end: see top of pack.

Additional information

- Contents may settle during transit.

16 CENTICALS **483g e**

Figure 18: Tesco, Bran Flakes Healthy Living Option 3: Information is stated per 1 CENTICAL of product (which equals one serving) and per 1 CENTICAL of product with 0.5 CENTICALS of semi-skimmed milk. Total content is changed in order to make it a multiple of CENTICAL – the recommended serving size.

As in option 2, the basic focus of the label in option 3 is CENTICAL in nature. Information is stated per 1 CENTICAL serving of product. However, as opposed to option 2, in option 3 not only the basic serving size is a multiple of half-CENTICALS—other important sizes relating to the product—the amount of milk consumed with a basic serving and the total content of the package—are also adjusted to make them fit more naturally into the CENTICAL concept. In option 3 the amount of semi-skimmed milk consumed with a 1-CENTICAL serving of product is reduced from 0.59 CENTICALS to 0.5 CENTICALS. The total content of the package is reduced by 3% in order to make it too a multiple of CENTICALS.

Allergen Information

- Contains wheat, gluten
- This Product may contain traces of nuts, as it has been made in a factory that uses nut ingredients.

V Suitable for vegetarians

Ingredients

Wheat, Wheat Bran, Sugar, Malt Extract, Salt, Niacin, Iron, Pantothenic Acid, Thiamin, Riboflavin, Vitamin B₆, Folic Acid, Vitamin D, Vitamin B₁₂.

Nutrition

Total Calories 1600. 100 calories (30g) serving of Healthy Living Bran Flakes typically contains at least 30% of the recommended daily allowance of Vitamin D, Thiamin (B₁), Riboflavin (B₂), Niacin, Vitamin B₆, Folic Acid, Vitamin B₁₂, Pantothenic Acid and Iron.

Typical Composition		100 calories provide	100 calories (30g/1oz) serving with 50 calories (106ml) skimmed milk provides
Weight	30g	Energy	632kJ
Weight			150kcal*
Protein	3g		6.5g
Carbohydrate	20.1g		25.4g
of which sugars	5.2g		10.4g
Fat	0.72g		2.4g*
of which saturates	0.2g		1.3g
Fibre**	4.2g		4.2g
Sodium	0.2g		0.3g
Vitamines/Minerals			
Vitamin D	1.5µg (30% RDA)		1.5 µg (30% RDA)
Thiamin (B ₁)	0.4mg (30% RDA)		0.5mg (34% RDA)
Riboflavin (B ₂)	0.5mg (30% RDA)		0.7mg (44% RDA)
Niacin	5.4mg (30% RDA)		6.3mg (35% RDA)
Vitamin B ₆	0.6mg (30% RDA)		0.7mg (34% RDA)
Folic Acid	120.0µg (60% RDA)		126.3µg (63% RDA)
Vitamin B ₁₂	0.3µg (30% RDA)		0.7µg (72% RDA)
Pantothenic Acid	1.8mg (30% RDA)		2.1mg (36% RDA)
Iron	4.2mg (30% RDA)		4.3mg (30% RDA)

RDA = Recommended Daily Allowance

This pack contains 16 100 calories servings.

A serving of 100 calories (30g) contains the equivalent of approx. 0.7g of salt.

* Calories/Fat per serving with whole milk: 200kcal/5.6g

Calories/Fat per serving with skimmed milk: 150kcal/0.8g

** Fibre has been determined by AOAC analysis.

Guideline daily amounts

Each day	Women	Men	Per serving
Calories	2000	2500	150

Fat	70.0g	95.0g	2.5g
Salt	5.0g	7.0g	0.7g

These figures are for average adults of normal weight.
Your own requirements will vary with age, size and activity level.

per serving
2 1/2*

As calculated by Tesco
using information published by
Weight Watchers Int'l Inc. for consumer
information only. This product is not
endorsed or sponsored by Weight
Watchers Int'l Inc., the owner of the
Points® trademark.

* using semi-skimmed milk

Storage

- Store in a cool, dry place.
- To retain freshness fold over inner bag after use.
- Best before end: see top of pack.

Additional information

- Contents may settle during transit.

1600 Calories

483g e

Figure 19: Tesco, Bran Flakes Healthy Living, Option 4 -- Information is stated per 100 calories of product (which equals one serving) and per 100 calories of product with 50 calories of semi-skimmed milk. Total content is changed in order to make it a multiple of 100 calories, the recommended serving size.

Option 4 is the same as option 2, except that information is stated relative to 100 calories rather than relative to 1 CENTICAL.

Example No. 4: Kraft Food's Breyers Yogurt -- Creme Savers Raspberries & Creme Swirled Yogurt

The Creme Savers Raspberries & Creme Swirled Yogurt container contains 227g of product, defined as one serving. Figure 20 shows the information copied from the current product labeling. The current labels state the total weight of the package and the macro and micronutrient content per container, i.e. serving.



Nutrition Facts			
Serving Size 227g			
Servings per package 1			
Amount Per Serving			
Calories 230		Calories from Fat 25	
% Daily Value*			
Total Fat 3g		5%	
Saturated Fat 2g		10%	
Cholestrol 25mg		8%	
Sodium 230mg		10%	
Potassium 320mg		9%	
Total Carbohydrate 44g		15%	
Dietary Fiber 0g		0%	
Sugars 36g			
Proteins 7g			
Vitamin A 0%		* Vitamin C 0%	
Calcium 20%		* Iron 0%	
* Percent Daily values are based on 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g

Figure 20: Creme Savers Raspberries & Creme Swirled Yogurt, current label

Since caloric content of a serving/container is not a multiple of 100 or 50 calories, the product does not fit as is into the CENTICAL method. Labeling, however, can

be made calorie-based even without changing the product. Figures 21-24 show calorie-focused labels that can be used with the original product. Options 25-26 show calorie-focused labels used with a version of the product adapted for use within the CENTICAL method. Options 27-28 show carbohydrate-focused labels that address the needs of consumers whose primary nutritional goal is to reduce total carbohydrate consumption, *i.e.*, consumers who define a daily carbohydrate budget rather than a daily caloric budget.

N u t r i t i o n F a c t s			
Total Calories 230			
Portions per package 1			
Amount Per Portion			
Weight 227g		Calories from Fat 25	
		% Daily Value*	
Total Fat 3g		5%	
Saturated Fat 2g		10%	
Cholesterol 25mg		8%	
Sodium 230mg		10%	
Potassium 320mg		9%	
Total Carbohydrate 44g		15%	
Dietary Fiber 0g		0%	
Sugars 36g			
Proteins 7g			
Vitamin A 0%		* Vitamin C 0%	
Calcium 20%		* Iron 0%	
* Percent Daily values are based on 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g

Front of package markings:

230 calories

Figure 21: Creme Savers Raspberries & Creme Swirled Yogurt, Option 1 -- information stated per serving (*i.e.* total container), which is defined in calories.

As in the original label, option 1 states the macro and micronutrient content per container (*i.e.*, serving). But whereas the original label defines the content of the container in weight units, option 1 defines it in calories. Caloric content here is the leading message. Total weight is given per total calories, as opposed to the other way around in the original label.

Nutrition Facts			
Total Calories 230			
Portions per package 1			
Amount Per 100 Calories		No. of 100 Calorie Units in package: 2.3	
Weight 99g		Calories from Fat 11	
		% Daily Value*	
Total Fat 1.3g		2%	
Saturated Fat 0.9g		4%	
Cholesterol 10.9mg		3%	
Sodium 100mg		4%	
Potassium 139mg		4%	
Total Carbohydrate 4.5g		7%	
Dietary Fiber 0g		0%	
Sugars 16g			
Proteins 7g			
Vitamin A 0%		* Vitamin C 0%	
Calcium 9%		* Iron 0%	
* Percent Daily values are based on 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g

Front of package markings:

230 calories

Figure 22: Creme Savers Raspberries & Creme Swirled Yogurt, Option 2 -- information stated per 100 calories.

As in option 1, option 2 states the total content of the container in calories. But rather than stating the macro and micronutrient content per container, option 2 states the information per 100 calories. This makes it easier to compare the benefits of 100 calories of product to the benefits of 100 calories of another different food (whether within the same food group/category or in different food groups/categories).

N u t r i t i o n F a c t s		
Total CENTICALs 2.3		
CENTICALs Per Portion 2.3		
Amount Per Portion		
Weight 227g	CENTICALs from Fat 0.25	
	% Daily Value*	
Total Fat 3g	5%	
Saturated Fat 2g	10%	
Cholestrol 25mg	8%	
Sodium 230mg	10%	
Potassium 320mg	9%	
Total Carbohydrate 44g	15%	
Dietary Fiber 0g	0%	
Sugars 36g		
Proteins 7g		
Vitamin A 0%	* Vitamin C 0%	
Calcium 20%	* Iron 0%	
* Percent Daily values are based on 20		
CENTICALs diet. Your daily values may be higher		
or lower depending on your calorie needs:		
	CENTICALs:	20 25
Total Fat	Less Than	65g 80g
Sat Fat	Less Than	20g 25g
Cholesterol	Less Than	300mg 300mg
Sodium	Less Than	2,400mg 2,400mg
Total Carbohydrates		300g 375g
Fiber		25g 30g

Front of package markings:

2.3 CENTICALS

Figure 23: Creme Savers Raspberries & Creme Swirled Yogurt, Option 3: information stated per portion, defined in CENTICAL units.

As in the original label, the macro and micronutrient content are stated per portion (container). However, the size of the portion is defined in CENTICAL units, and daily values are also given relative to different daily CENTICAL budgets.

Nutrition Facts	
Total CENTICALs 2.3	
CENTICALs Per Portion 2.3	
Amount Per CENTICAL	
Weight 99g	Calories from Fat 11
% Daily Value*	
Total Fat 1.3g	2%
Saturated Fat 0.9g	4%
Cholestrol 10.9mg	3%
Sodium 100mg	4%
Potassium 139mg	4%
Total Carbohydrate 4.5g	7%
Dietary Fiber 0g	0%
Sugars 16g	
Proteins 7g	
Vitamin A 0%	* Vitamin C 0%
Calcium 9%	* Iron 0%
* Percent Daily values are based on 20	
CENTICALs diet. Your daily values may be higher	
or lower depending on your calorie needs:	
	Centicals: 20 25
Total Fat	Less Than 65g 80g
Sat Fat	Less Than 20g 25g
Cholesterol	Less Than 300mg 300mg
Sodium	Less Than 2,400mg 2,400mg
Total Carbohydrates	300g 375g
Fiber	25g 30g

Front of package markings:

2.3 CENTICALs

Figure 24: Creme Savers Raspberries & Creme Swirled Yogurt, Option 4 -- Information stated per CENTICAL of product.

As in option 2, information is stated not relative to the entire container, but relative to a caloric unit, here – the CENTICAL. Total content is also stated in CENTICAL units and daily values are stated relative to daily CENTICAL budgets.

Nutrition Facts			
Total CENTICALS: 2			
Amount Per Portion			
Weight 197g	Calories from Fat 22		
	% Daily Value*		
Total Fat 3g		5%	
Saturated Fat 2g		10%	
Cholesterol 22mg		7%	
Sodium 203mg		9%	
Potassium 282mg		8%	
Total Carbohydrate 39g		13%	
Dietary Fiber 0g		0%	
Sugars 32g			
Proteins 6g			
Vitamin A 0%		* Vitamin C 0%	
Calcium 18%		* Iron 0%	
* Percent Daily values are based on 20 CENTICALs diet. Your daily values may be higher or lower depending on your calorie needs:			
	Centicals:	20	25
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g

Front of package markings:

2 CENTICALS

Figure 25: Creme Savers Raspberries & Creme Swirled Yogurt, Option 5 -- Information is stated per portion, which is defined in CENTICAL units. Total content is changed in order to make it a multiple of CENTICALS.

As in option 3, macro and micronutrient content are stated per portion (container), which is defined in CENTICAL units. Daily values are also given relative to different daily CENTICAL budgets. However, in option 5 the total content of the package is reduced by 13% to make it a multiple of CENTICALS. This altered product conforms to the preferred embodiment of the CENTICAL method -- fitting into a line of products such that their total contents and/or the basic portions are multiples of CENTICALS or half CENTICALS.

Nutrition Facts			
Total Calories 200			
Amount Per Portion			
Weight 197g		Calories from Fat 22	
% Daily Value*			
Total Fat 3g		5%	
Saturated Fat 2g		10%	
Cholestrol 22mg		7%	
Sodium 203mg		9%	
Potassium 282mg		8%	
Total Carbohydrate 39g		13%	
Dietary Fiber 0g		0%	
Sugars 32g			
Proteins 6g			
Vitamin A 0%		* Vitamin C 0%	
Calcium 18%		* Iron 0%	
* Percent Daily values are based on 2,000			
Calorie diet. Your daily values may be higher			
or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g

Front of package markings:

200 calories

Figure 26: Creme Savers Raspberries & Creme Swirled Yogurt, Option 6.-- Information is stated per portion, which is defined in caloric units. Total content is changed in order to make it a multiple of 100 calories.

Option 6 is the same as option 5, except that caloric content is stated in calories rather than CENTICALS.

Nutrition Facts		
Total Carbs: 44g		
Servings per package 1		
Amount Per Serving		
Weight 227g		
Calories 230		Calories from Fat 25
	% Daily Value*	
Total Fat 3g		5%
Saturated Fat 2g		10%
Cholesterol 25mg		8%
Sodium 230mg		10%
Potassium 320mg		9%
Total Carbohydrate 44g		15%
Dietary Fiber 0g		0%
Sugars 36g		
Proteins 7g		
Vitamin A 0%		* Vitamin C 0%
Calcium 20%		* Iron 0%
* Percent Daily values are based on Xg		
CARBS diet. Your daily values may be higher		
or lower depending on your carbohydrate limit:		
	Carbs:	X Y
Total Fat	Less Than	To be defined
Sat Fat	Less Than	To be defined
Cholesterol	Less Than	To be defined
Sodium	Less Than	To be defined
Total Calories		To be defined
Fiber		To be defined

Front of package markings:

44g Carbs

Figure 27: Creme Savers Raspberries & Creme Swirled Yogurt, Option 7 -- Information is stated per container, which is defined terms of its carbohydrate contents.

Option 7 stresses carbohydrate content, stating nutritional information relative to the portion/package, whose content is defined in terms of carbohydrate contents (44g). This label caters to the needs of subjects whose primary nutritional goal is to limit carbohydrate consumption. It is assumed here that recommended daily values will be defined relative to different carbohydrate budgets.

Nutrition Facts	
Total Carbs: 40g	
Servings per package 1	
Amount Per Serving	
Weight 206g	
Calories 209	Calories from Fat 23
% Daily Value*	
Total Fat 3g	5%
Saturated Fat 2g	9%
Cholesterol 23mg	7%
Sodium 209mg	9%
Potassium 291mg	9%
Total Carbohydrate 40g	15%
Dietary Fiber 0g	0%
Sugars 33g	
Proteins 6g	
Vitamin A 0%	* Vitamin C 0%
Calcium 18%	* Iron 0%
* Percent Daily values are based on X	
CARBs diet. Your daily values may be higher	
or lower depending on your carbohydrate limit:	
	Carbs: X Y
Total Fat	Less Than To be defined
Sat Fat	Less Than To be defined
Cholesterol	Less Than To be defined
Sodium	Less Than To be defined
Total Calories	To be defined
Fiber	To be defined

Front of package markings:

40g Carbs

Figure 28: Creme Savers Raspberries & Creme Swirled Yogurt, Option 8 -- Information is stated per container, which is defined terms of its carbohydrate contents. Total content is modified to make it a multiple of 10g carbohydrates.

As in option 7, option 8 is focused on carbohydrates. The difference is that the total content of the container is reduced by 9% to make it a multiple of 10g carbohydrates. This will allow the product to be used within an embodiment of the CENTICAL method in which foods are sold in packages and/or portions that contain a multiple of predetermined carbohydrates content (e.g. 10g.). In this respect, option 8 is similar to options 5 and 6 -- in all these options the total package content is modified to make it a multiple of a chosen base nutritional content unit (1 CENTICAL in option 5, 100 calories in option 6, 10g of carbohydrates in option 8), intended to be one of a line of products likewise provided in multiples of the chosen nutritional unit.

Example No. 5: California Pizza Kitchen – Five Cheese & Tomato Pizza

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The California Pizza Kitchen Five Cheese & Tomato Pizza package contains 6 servings of 129g each.



Nutrition Facts			
Serving Size 129g			
Servings per package 6			
Amount Per Serving			
Calories	350	Calories from Fat 140	
		% Daily Value*	
Total Fat	15g		23%
Saturated Fat	8g		40%
Cholesterol	35mg		12%
Sodium	770mg		32%
Total Carbohydrate	35g		12%
Dietary Fiber	2g		
Sugars	7g		
Protein	18g		
Vitamin A	6%	* Vitamin C	0%
Calcium	35%	* Iron	8%
* Percent Daily values are based on 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g

Figure 29: California Pizza Kitchen Five Cheese & Tomato Pizza – information copied from original label.

Information on the original label is stated per portion. Our assumption is that portions are clearly marked on the product itself, and their size is stated in terms of weight.

Since both the individual portions and the total container contain a multiple of 50 calories, the product fits as is into the CENTICAL method.

Nutrition Facts

Total Calories 2,100

Calories from fat per portion: 140

Calories Per Portion 350

Calories from fat per 100 calories: 39

Amount Per Portion

Portions per Package 6

Weight 129g

% Daily Value*

Total Fat	15g	23%
Saturated Fat	8g	40%
Cholesterol	35mg	12%
Sodium	770mg	32%
Total Carbohydrate	35g	12%
Dietary Fiber	2g	
Sugars	7g	
Protein	18g	
Vitamin A	6%	* Vitamin C 0%
Calcium	35%	* Iron 8%

* Percent Daily values are based on 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g

Front of package markings:

2100 calories

Or

6x350 calories

(assuming portions are clearly marked on the pizza)

Figure 30: California Pizza Kitchen Five Cheese & Tomato Pizza, Option 1: Information stated per portion, defined in terms of its caloric content.

As in the original label, information in option 1 is stated per portion, but the size of the portions is stated in terms of their caloric content. The leading message in the label is caloric – weight is stated per calorically-defined portion rather than the other way around.

N u t r i t i o n F a c t s			
Total Calories 2,100			
Calories Per Portion 350		Calories from Fat 140	
Amount Per 100 Calories		100 Calorie Units in Portion: 3.5	
Weight	37g		
% Daily Value*			
Total Fat	4.3g	6.5%	
Saturated Fat	2.3g	11.5%	
Cholestrol	10mg	3.5%	
Sodium	220mg	9.0%	
Total Carbohydrate	10g	3.5%	
Dietary Fiber	0.6g		
Sugars	2g		
Protein	5.1g		
Vitamin A	1.7%	* Vitamin C	0%
Calcium	10%	* Iron	2.3%
* Percent Daily values are based on 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g

Front of package
markings:

2100 calories

Or

6x350 calories

(assuming portions are
clearly marked on the
pizza)

Figure 31: California Pizza Kitchen Five Cheese & Tomato Rizza, Option 2: Information stated per 100 calories of product.

Option 2 states macro and micronutrient content and weight per 100 calories of product rather than per portion. This facilitates a comparison of the benefits of the product with the benefits of the same number of calories obtained from a different food (whether within the same food group/category or in different food groups/categories).

Nutrition Facts			
Total CENTICALs 21			
CENTICALs Per Portion 3.5		CENTICALs from Fat per portion: 1.4	
Amount Per Portion		Portions per Package 6	
Weight	129g		
% Daily Value*			
Total Fat	15g	23%	
Saturated Fat	8g	40%	
Cholestrol	35mg	12%	
Sodium	770mg	32%	
Total Carbohydrate	35g	12%	
Dietary Fiber	2g		
Sugars	7g		
Protein	18g		
Vitamin A	6%	* Vitamin C	0%
Calcium	35%	* Iron	8%
* Percent Daily values are based on 20 CENTICAL diet. Your daily values may be higher or lower depending on your calorie needs:			
	CENTICALs:	20	25
Total Fat	Less Than	65g	80g
Sat Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrates		300g	375g
Fiber		25g	30g

Front package markings:

21 CENTICALs

Or

**6x3.5
CENTICALs**

(assuming portions are clearly marked on the pizza)

Figure 32: California Pizza Kitchen Five Cheese & Tomato Pizza, Option 3: Information stated per portion, defined in terms of its CENTICAL content.

Option 3 is the same as option 1, except that portion size is defined in CENTICAL units rather than calories. The leading message, therefore, has a CENTICAL focus.

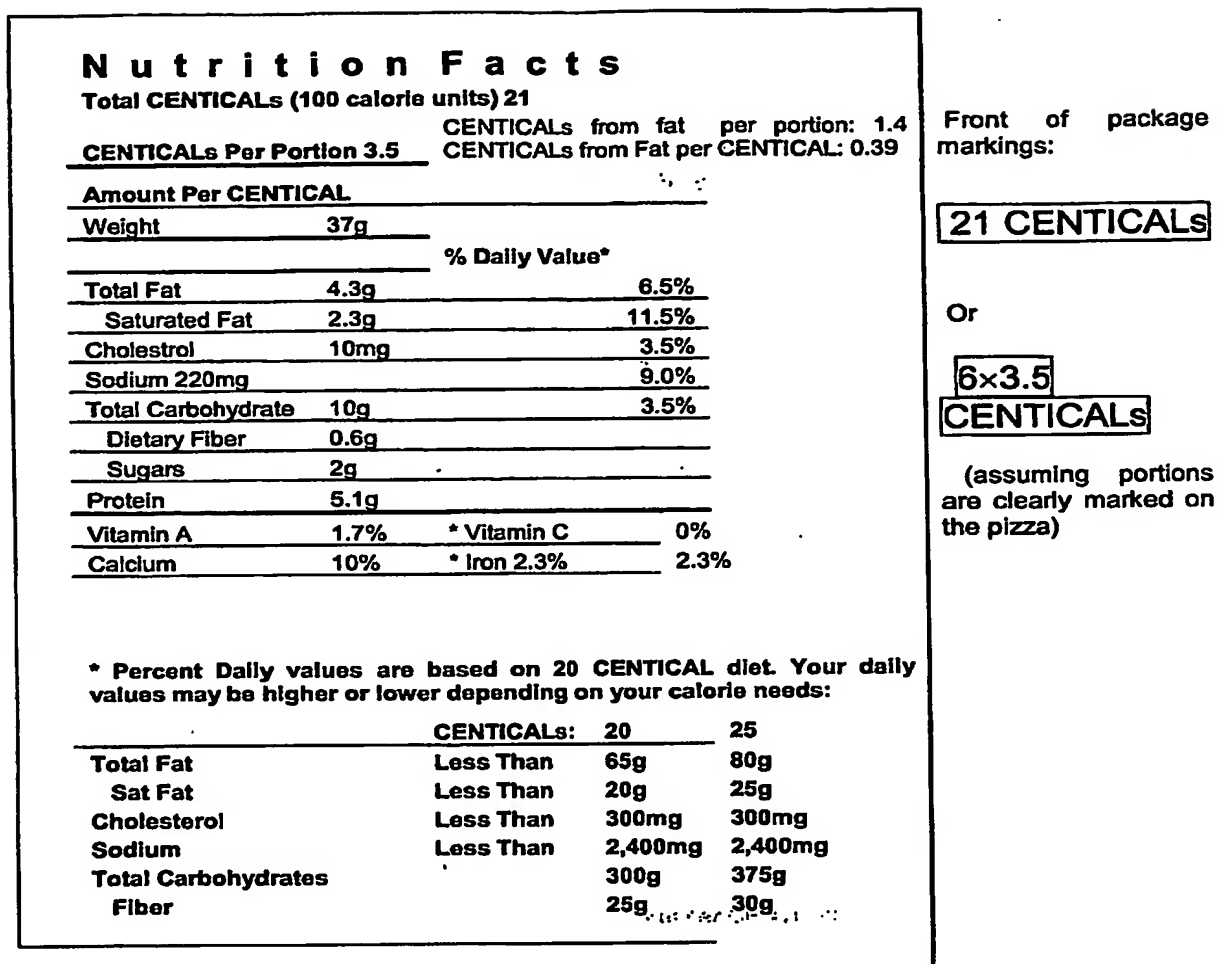


Figure 33: California Pizza Kitchen Five Cheese & Tomato Pizza, Option 4: Information stated per CENTICAL of product.

Option 4 is the same as option 2, except that it states macro and micronutrient content and weight per CENTICAL of product rather than per 100 calories. The leading message therefore has a CENTICAL focus and the label facilitates comparison of benefits of one CENTICAL of the product with the benefits of one CENTICAL quantities of other foods.

N u t r i t i o n F a c t s					
Total Calories 2,100			Calories from Fat/portion: 140		
Calories Per Portion 350			Calories from Fat/100Cals: 40		
Portions per Package 6					
Amount	Per Portion	Per 100 Calories	Per Portion	Per 100 calories	
Weight	129g	37g			
Price		\$0.2			
			% Daily Value*		
Total Fat	15g	4.3g	23%	6.5%	
Saturated Fat	8g	2.3g	40%	11.5%	
Cholestrol	35mg	10mg	12%	3.5%	
Sodium	770mg	220mg	32%	9.0%	
Total carbohydrate	35g	10g	12%	3.5%	
Dietary Fiber	2g	0.6g			
Sugars	7g	2g			
Protein	18g	5.1g			
Vitamin A	6%	1.7%	* Vitamin C	0%	0%
Calcium	35%	10%	* Iron	8%	2.3%
* Percent Daily values are based on 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:					
	Calories:	2,000	2,500		
Total Fat	Less Than	65g	80g		
Sat Fat	Less Than	20g	25g		
Cholesterol	Less Than	300mg	300mg		
Sodium	Less Than	2,400mg	2,400mg		
Total Carbohydrates		300g	375g		
Fiber		25g	30g		

Figure 34: California Pizza Kitchen Five Cheese & Tomato Pizza, Option 5: Information stated per portion defined in calories and per 100 calories of product.

Option 5 essentially combines options 1 and 2. It states macro and micronutrient content per portion defined in terms of caloric content and per 100 calories. Price and weight are also stated per 100 calories.

Nutrition Facts					
Total CENTICALs 21			CENTICALs from Fat/portion: 1.4		
CENTICALs Per Portion 3.5			CENTICALs from Fat/CENTICAL: 0.4		
Portions per Package 6					
Amount	Per Portion	Per CENTICAL	Per Portion	Per CENTICAL	
Weight	129g	37g			
Price		\$0.2			
			% Daily Value*		
Total Fat	15g	4.3g		23%	6.5%
Saturated Fat	8g	2.3g		40%	11.5%
Cholestrol	35mg	10mg		12%	3.5%
Sodium	770mg	220mg		32%	9.0%
Total carbohydrate	35g	10g		12%	3.5%
Dietary Fiber	2g	0.6g			
Sugars	7g	2g			
Protein	18g	5.1g			
Vitamin A	6%	1.7%	* Vitamin C	0%	0%
Calcium	35%	10%	* Iron	8%	2.3%
* Percent Daily values are based on a 20 CENTICAL diet. Your daily values may be higher or lower depending on your calorie needs:					
	CENTICALS:	20		25	
Total Fat	Less Than	65g		80g	
Sat Fat	Less Than	20g		25g	
Cholesterol	Less Than	300mg		300mg	
Sodium	Less Than	2,400mg		2,400mg	
Total Carbohydrates		300g		375g	
Fiber		25g		30g	

Figure 35: California Pizza Kitchen Five Cheese & Tomato Pizza, Option 6: Information stated per portion defined in CENTICALs and per 1 CENTICAL of product.

Option 6 is the same as option 5, except that caloric values are stated in CENTICALs rather than in calories.

APPENDIX 3: CALORIE-FOCUSED DEVICES

This section describes possible adaptations of various devices used at points of food making, processing and sale to a calorie-focused system (see *Creating the Infrastructure for a Calorie-Focused System*, page 19, for an overview).

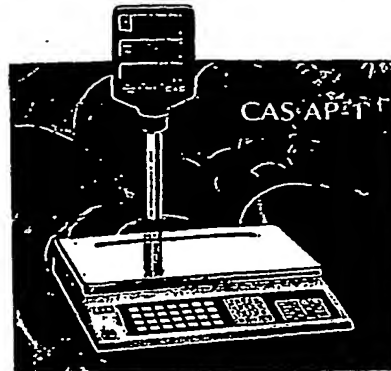
Calorie scales are not a new concept. The *DigiWeigh DW-99DK*, for example, accepts the food type as input, weighs the food portion and displays various data about the portion's macro and micronutrient content—Kilocalories, Kilojoules, Protein value, Fat value, Carbohydrate, Cholesterol value and Bread value (1 BE=10g carbohydrate). The device is intended for home use, for the 1 g - 3 kg range, and has an internal database of 476 different kinds of food⁶⁸. It is not difficult to imagine variants of this device intended for use at points of food sale, integrated with the store's ERP to provide data for the entire range of relevant products.



Calorie scales will have many uses in a supermarket offering CENTICAL™ products and calorie-focused information. For example, such scales, integrated with the store's ERP, will provide a tool for portion control, allowing consumers to measure out portions of bulk foods, fruit and vegetables in caloric units. Just as today consumers use self service scales at the supermarket to weigh the fruit and vegetables they buy, consumers will be able to use self service calorie scales to determine the caloric content of these same foods. Just as reaching a predetermined weight currently requires trial and error, so will reaching the determined caloric content — a consumer wishing to buy 900 calories of peaches, for example, may have to add or remove peaches of different sizes until the desired portion size is reached.

Whereas simple calorie scales are not new, we are proposing new calorie-focused devices that integrate caloric information into scales with more complex functions, such as automatic portioning devices, price-computing scales and weigh-price labelers. Examples of existing devices and their proposed calorie-focused variants follow.

CAS AP-1 is a standalone price computing scale, with an internal database of 200 products. The device displays the portion weight and price per unit and total price, and can add and total the price of multiple items⁶⁹.



Calorie-focused variants will display the total price and weight (optional) of the food portion and any subset of the following: calories per predetermined weight, weight per predetermined calories (preferably per 100 calories), nutrients content per predetermined calories, calories per predetermined price, price per predetermined calories (preferably per 100 calories), or total calories. Total calories may optionally be rounded, according to the relevant local laws.

Fig. 36 shows the current display for a 150 g portion of smoked salmon. Figs. 37-43 show some of the possible calorie-focused display options described above:

Weight	152 g
Price/100g	\$2
Total Price	\$3

Figure 36: Current display

Weight/100 calories	57.25 g
Total calories	262
Total Price	\$3

Figure 37: Weight/100 calories, total calories, total price

Calories/100g	174
Total calories (rounded)	270
Total Price	\$3

Figure 38: calories/100g, total calories (rounded), total price.

Note that in Fig. 38 total calories are rounded up from 262 to 270, according to the relevant American regulations. Regulations pertaining to calorie rounding may vary from country to country.

Price/100 calories	\$0.76
Total calories	262
Total Price	\$3

Figure 39: Price/100 calories, total calories, total price

Price/100 calories	\$0.76
Total calories (rounded)	270
Total Price	\$3

Figure 40: Price/100 calories, total calories (rounded), total price

Note that the total calories are rounded up from 262 to 270, according to the relevant American regulations, but total price is calculated on the basis of the non-rounded total caloric content.

Price/CENTICAL	\$0.76
Total CENTICALs (rounded)	2.70
Total Price	\$3

Figure 41: Price/CENTICAL, total CENTICALs (rounded), total price

Figure 41 is the same as Fig. 40, except that CENTICAL units are used instead of calories.

Calories/\$1	87.33
Total calories	262
Total Price	\$3

Figure 42: Calories/\$1, total calories, total price

Calories/\$1	87.33
Total calories (rounded)	270
Total Price	\$3

Figure 43: Calories/\$1, total calories (rounded), total price

As in Fig. 41, total calories are rounded up from 262 to 270, according to the relevant American regulations, but total price is calculated on the basis of the non-rounded total caloric content.

The **METTLER TOLEDO 8450SS** is a full featured self-service scale that prints graphics, safe handling instructions, and nutrition facts labels. The Model 8450 uses Ethernet TCP/IP to connect to the existing network and has a four-line display⁷⁰. Calorie-focused variants according to the present invention will be able to access a variety of calorie-focused parameters through the store's ERP, to use these parameters in calculations and produce labels. According to the present invention calorie-focused variants of this device may display and print the total price of the food portion, its weight (optional) and any subset of the following: weight, calories per predetermined weight, weight per predetermined calories (preferably per 100 calories), nutrient content per predetermined calories (preferably per 100 calories), calories per predetermined price, price per predetermined calories (preferably per 100 calories), or total calories. Total calories may optionally be rounded, according to the relevant local laws. In addition to or instead of current parameters, the nutrition facts label may state information relative to a caloric reference unit (see "CENTICAL™ as Reference Unit for Food-Related Information," page 15 and Appendix 2). Figures ??? show some of the possible calorie-focused labels a calorie-focused variant of the METTLER TOLEDO 8450SS may print:



METTLER TOLEDO 8450SS

SMOKED SALMON					
DEC.7.04	JAN.7.05	150	57	262	\$3
PACKED ON	SELL BY	NET WT.GR	GR/100 CALORIES	TOTAL CALORIES	TOTAL PRICE
MANUFACTURER'S NAME					
MANUFACTURER'S ADDRESS					

Figure 44: Weight, weight per predetermined number of calories (preferably 100 calories, as shown here), total calories, total price

SMOKED SALMON					
DEC.7.04	JAN.7.05	150	57	270	\$3
PACKED ON	SELL BY	NET WT.GR	GR/100 CALORIES	TOTAL CALORIES	TOTAL PRICE
MANUFACTURER'S NAME					
MANUFACTURER'S ADDRESS					

Figure 45: Weight, weight per predetermined number of calories (preferably 100 calories, as shown here), rounded total calories, total price

SMOKED SALMON					
DEC.7.04	JAN.7.05	150	57	2.62	\$3
PACKED ON	SELL BY	NET WT.GR	GR/CENTICAL	TOTAL CENTICALS	TOTAL PRICE
MANUFACTURER'S NAME					
MANUFACTURER'S ADDRESS					

Figure 46: Weight, weight per CENTICAL, total CENTICALS, total price

Figure 46 is the same as Figure 44, except that the caloric reference is the CENTICAL.

SMOKED SALMON						
DEC.7.04	JAN.7.05	150	2	174	262	\$3
PACKED ON	SELL BY	NET WT.GR	\$/100 GR	CALORIES/100GR	TOTAL CALORIES	TOTAL PRICE
MANUFACTURER'S NAME						
MANUFACTURER'S ADDRESS						

Figure 47: Weight, price /weight unit (here 100 gr), calories/weight unit (here 100 gr), total calories, total price

SMOKED SALMON						
DEC.7.04	JAN.7.05	150	0.76	57.25	262	\$3
PACKED ON	SELL BY	NET WT.GR	\$/100 CALORIES	GR/100 CALORIES	TOTAL CALORIES	TOTAL PRICE
MANUFACTURER'S NAME						
MANUFACTURER'S ADDRESS						

Figure 48: Weight, price/predetermined calories (here 100 calories), weight/predetermined calories (here 100 calories), total calories, total price

SMOKED SALMON						
DEC.7.04	JAN.7.05	150	0.76	57.25	2.62	\$3
PACKED ON	SELL BY	NET WT.GR	\$/CENTICAL	GR/CENTICAL	TOTAL CENTICALS	TOTAL PRICE
MANUFACTURER'S NAME						
MANUFACTURER'S ADDRESS						

Figure 49: Weight, price/predetermined calories (here 1 CENTICAL), weight/predetermined calories (here 1 CENTICAL), total CENTICALS, total price

Figure 49 is the same as Figure 48, except that the caloric reference is the CENTICAL.

SMOKED SALMON						
DEC.7.04	JAN.7.05	143	0.76	57.25	250	\$1.9
PACKED ON	SELL BY	NET WT.GR	\$/100 CALORIES	GR/100 CALORIES	TOTAL CALORIES	TOTAL PRICE
MANUFACTURER'S NAME						
MANUFACTURER'S ADDRESS						

Figure 50: Weight, price/predetermined calories (here 100), weight/predetermined calories (here 100), total calories, total price – product adapted to the CENTICAL™ method.

Whereas Figures 44–49 show calorie-focused labels for non-CENTICAL™ products (i.e. products that do not contain a multiple of 100 or 50 calories), Fig. 50 shows a calorie-focused label for a product adapted to the CENTICAL™ method by changing the amount of product to 250 calories.

SMOKED SALMON						
DEC.7.04	JAN.7.05	143	0.76	57.25	2.5	\$1.9
PACKED ON	SELL BY	NET WT.GR	\$/CENTICAL	GR/CENTICAL	TOTAL CENTICALS	TOTAL PRICE
MANUFACTURER'S NAME						
MANUFACTURER'S ADDRESS						

Figure 51: Weight, price/CENTICAL, weight/CENTICAL, total CENTICALs, total price – product adapted to the CENTICAL™ method.

Fig. 51 is the same as Fig. 50, except that the caloric reference unit is the CENTICAL.


						
SMOKED SALMON						
DEC.7.04	JAN.7.05	143	0.76	57.25	250	\$1.9
PACKED ON	SELL BY	NET WT.GR	\$/100 CALORIES	GR/100 CALORIES	TOTAL CALORIES	TOTAL PRICE
MANUFACTURER'S NAME						
MANUFACTURER'S ADDRESS						

Figure 52: Weight, price/predetermined calories (here 100), weight/predetermined calories (here 100), total calories, total price, CENTICAL™ indication in calories; product adapted to the CENTICAL™ method.

Fig. 52 is the same as Fig. 51, except that a CENTICAL™ indication in calorie units is attached, preferably in the form of a re-attachable sticker for documentation and tracking of calorie consumption.


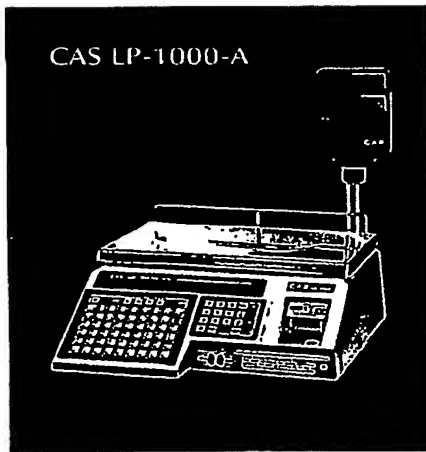
						
. SMOKED SALMON						
DEC.7.04	JAN.7.05	143	0.76	57.25	2.5	\$1.9
PACKED ON	SELL BY	NET WT.GR	\$/CENTICAL	GR/CENTICAL	TOTAL CENTICALS	TOTAL PRICE
MANUFACTURER'S NAME						
MANUFACTURER'S ADDRESS						

Figure 53: Weight, price/CENTICAL, weight/CENTICAL, total CENTICALs, total price, CENTICAL™ indication in CENTICAL units; product adapted to the CENTICAL™ method.

Fig. 53 is the same as Fig. 52, except that the caloric reference unit is the CENTICAL™.

CAS LP-1000-A is a commercial scale-printer with Auto-Printing and "Save" Keys for Pre-Pack, and various data transfer capabilities: Scale to Scale PLU Data Transfer, Scale to PC & PC to Scale Data Transfer⁷¹. Proposed calorie-focused variants will be allowing entry of caloric information (calories/100g, weight/predetermined calories —



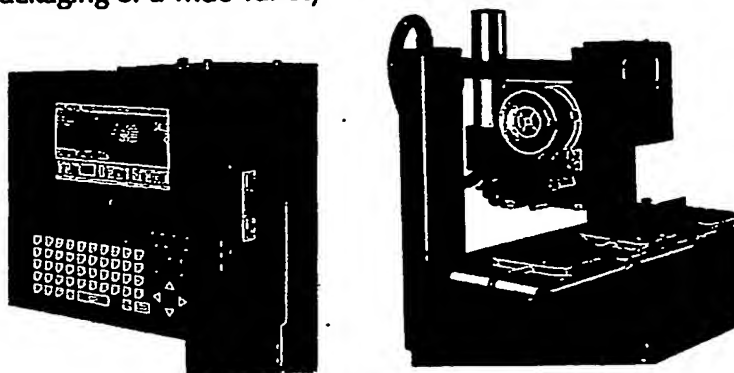
preferably 100 calories, price/predetermined calories — preferably 100 calories, calories/\$1) into the device's internal database. These relevant caloric data may also be updated through the store's ERP.

The **CAS LP-1000-A** prints non-UPC labels, UPC with ingredient labels, non-UPC with safe handling information, and UPC with safe handling information. Proposed calorie-focused variants will be able to display and/or print the total price of the food portion, its weight (optional) and any subset of the following: weight, calories per predetermined weight, weight per predetermined calories (preferably

per 100 calories), nutrient content per predetermined calories (preferably 100 calories), calories per predetermined price, price per predetermined calories (preferably per 100 calories), or total calories. Total calories may optionally be rounded, according to the relevant local laws.

AVERY BERKEL B806 is a weigh-price-labeler for both industrial and rear-of-store packaging of a wide variety of fresh food products.

Avery Berkel has recently added a number of optional software features to further enhance the functionality and performance of the machine⁷².



AVERY BERKEL B806

Here too, calorie-focused variant

according to the present invention will be able to refer to caloric information in the device's database (internal or store's ERP) and print calorie-focused labels as described above.

METTLER TOLEDO 662 is a manual prepackaging system integrated with scales and a printer. The user enters the Price Look Up (PLU) number, places the product on the platter (which doubles as the wrapping platform) and wraps and seals the product. The label automatically prints and can then be applied to the package⁷³. Here too, calorie-focused variant according to the present invention will be able to refer to caloric information in the device's database (internal or store's ERP) and print calorie-focused labels as described above.



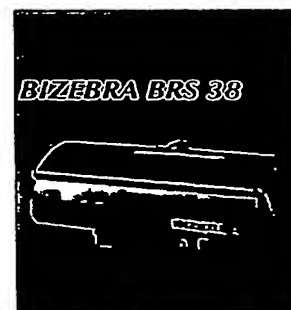
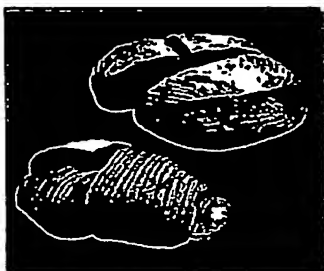
METTLER TOLEDO 662



BIZEBRA A500 is slicing machine with an integrated scale. Various slicing programs are entered and accessed via a touch screen display. Directly after slicing, each individual slice is weighed and the slice thickness automatically adjusted. In this way, the integrated scale ensures consistently equal portions while slicing is in progress. Slice thickness: 0,5-30 mm (0.01 - 1.2⁷⁴). Calorie-focused variants of the **BIZEBRA A500** will allow input of desired slice size in caloric units, preferably in multiples of 100 or 50 calories. The device will simply access a look up table in

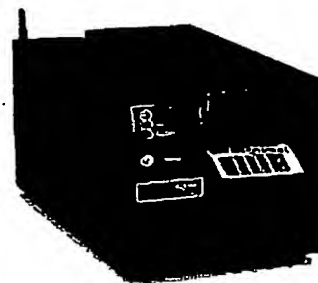
its internal software or in the store's ERP and will convert the desired slice size from calories to weight and to thickness. This will allow CENTICAL-based portioning. The device's display may show total calorie content or other calorie-focused parameters. Such calorie-focused integrated weigh-slice devices may be used for different types of products, including cheese, processed meats, bread and others.

BIZEBRA BREAD SLICER BRS 38 is a precision bread slicer that offers a wide range of options to cut long or round breads (up to a diameter of 30 cm (11.8") fast and precisely into slices of varying thicknesses (5 - 30 mm) simply set by pressing the +/- keys. As it is more flexible than gridset machines it is possible to cut the exact number of slices required by the customer. The Slicer cuts all kinds of breads (especially hard and crusty breads) into individual slices of a required thickness. Three slice thicknesses may immediately be called up via the memory keys⁷⁵.

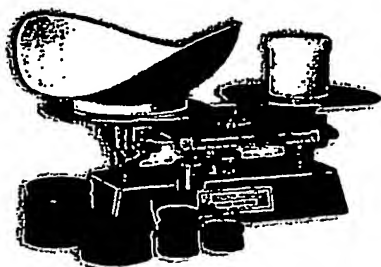


A calorie-focused variant of a bread slicer with a flexible thickness mechanism, according to the present invention, will allow calorie-based portioning. The device will accept the bread type and the desired slice size in calories as input, will refer to a look-up-table (in its internal software or in the store's ERP) to convert the required size to the appropriate slice thickness and slice the bread as requested.

INTERMEC EasyCoder 3400 is a label, ticket and tag printer with world-wide language support and standard support of most 2D bar code symbologies and advanced operating modes for long-term flexibility. The Intermec 3400 will print labels sized up to 11.43 cm (4.5 in.) wide and any length⁷⁶. Calorie-focused printer variants according to the present invention will print CENTICAL™ indications and/or calorie-focused information on any



type of label, ticket or tag (see "CENTICAL™ Indications," page 13, "CENTICAL™ as Reference Unit for Food-Related Information," page 15 and Appendix 2).



DETECTO 1051/1052 Mechanical Bakers Dough Scales are rugged, accurate scales designed specifically for the baker supplied with

a set of weights. Used extensively in retail bakeries as well as other food establishments, these models provide long-term, accurate use.⁷⁷ Calorie-focused variants of product-specific mechanical scales will be supplied with caloric weights — allowing portioning the dough (or other food for which the weights are dedicated) into CENTICAL-ly sized portions. For example, a bakery may use 200 calorie weights to portion dough into buns containing 200 calories each.

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- 72 <http://www.averyberkelusa.com/retail/labeling.htm>
- 73 http://www.mt.com/mt/product_detail/product.jsp?m=t&tr=Y1NDU3MzcwMS1QfDM3NjU1NzM3MDEtQ3w1NjY1NTczNzAxLUN8Nj&key=Q3MDg4NjM1_T
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Claims:

1. A method of marking the content of substances of a food product comprising identifying on a package of said food product a quantity of at least one substance present in said food product per a predetermined number of calories characterizing said food products.
2. A food package implementing the method of claim 1.
3. A method of marking a relative price of a food product comprising identifying on a package of said food product a price per a predetermined number of calories characterizing said food product.
4. A food package implementing the method of claim 2.
5. A device used in a point of food sale for weighing food, processing food, packaging food and/or determining the price of food, the device comprising:
 - (a) a mechanism for weighing food, processing food, packaging food and/or determining the price of food; and
 - (b) a mechanism for determining, reporting, displaying and/or controlling the number of calories of said food and/or a portion of said food.

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